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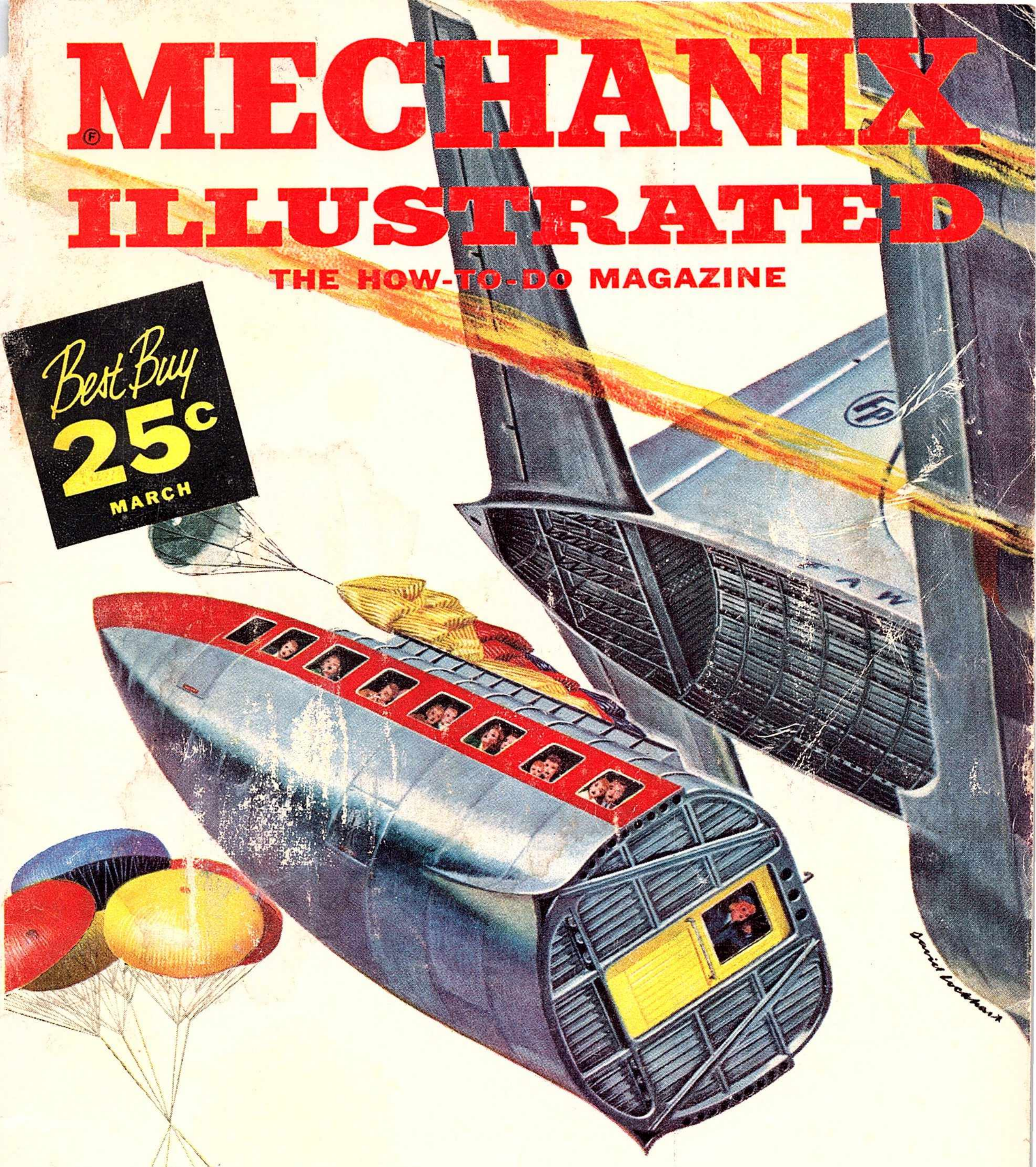

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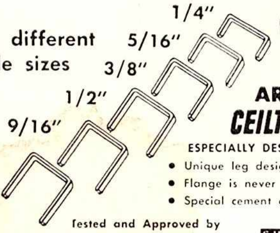

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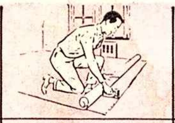
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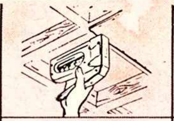
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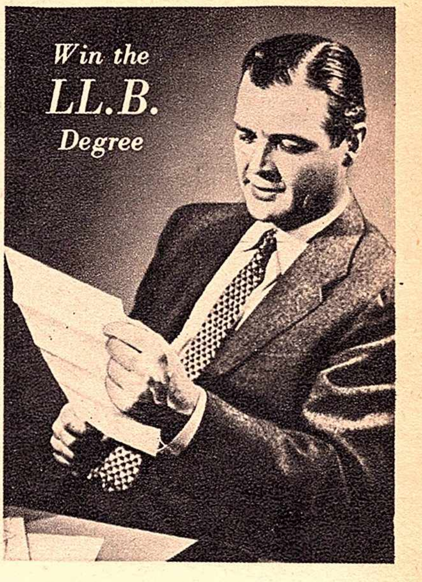

. . . Can YOU answer these legal problems?

CASE #1 Jones wrote Smith making an offer. Smith wrote his acceptance and mailed it. Then he decided to call it off and telegraphed Jones to that effect. Jones got the telegram before he did the letter. May he hold Smith to the contract?

ANSWER. Yes. Both Smith and Jones became bound when the letter containing the acceptance was mailed.

CASE #2 Doe said to Crane, "I will sell you 100 shares of XY stock at $50." Crane said, "I'll give you $45." Doe, knowing the market was unsettled, said nothing, but an hour later tendered 100 shares and a bill for $4,500. May he hold Crane?

ANSWER: No. Crane's counter-offer was a rejection of Doe's offer.

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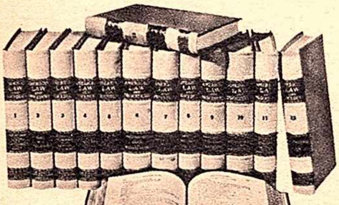

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I took a timetable out of my suitcase and began reading quietly in the manner prescribed, the names of about one hundred railway stations. I observed that, after reading them over a few times, I could recite the whole list off with hardly a mistake. With a little more practice I found I had committed them so completely to memory that I could remember them in the reverse order and even pick out one station from the list and say which number it was, and what were the names of the towns before and after it.

I was astonished at the memory I had acquired and spent the rest of my journey on more and more difficult experiments in memory, and reflecting how this new control I was achieving over my mind would materially help me to a greater success in life. After this, I worked hard at this wonderful memory system, and within a week I found I could recall passages from books and quote them with ease; names, addresses and business appointments were remembered immediately; and in four months I had succeeded in learning Spanish.

If I have obtained from life a measure of wealth and happiness, it is to that book I owe it, for it revealed to me the workings of my brain.

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I can only suppose that others wish to acquire what is, after all, the most valuable asset towards success in life.

Borg's address is: E. J. Borg, c/o Aubanel Publishers, 14 Highfield Road (Rathgar), Dublin, Ireland. Apply to him for his little book, "The Eternal Laws of Success." It is free to all who wish to develop their memory.

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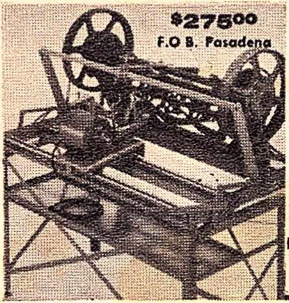

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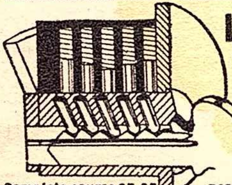

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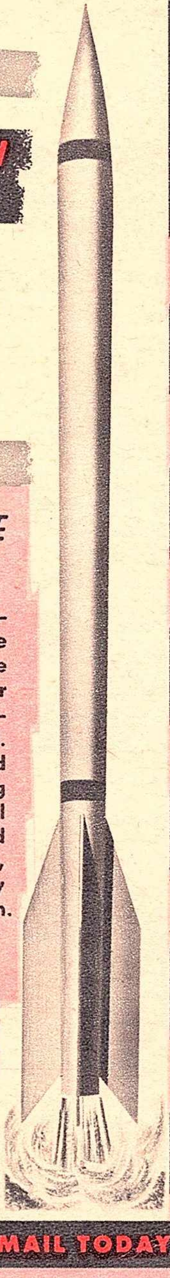

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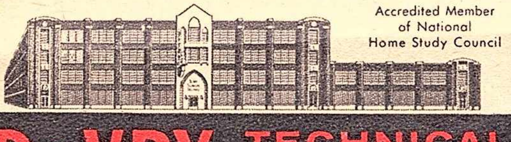

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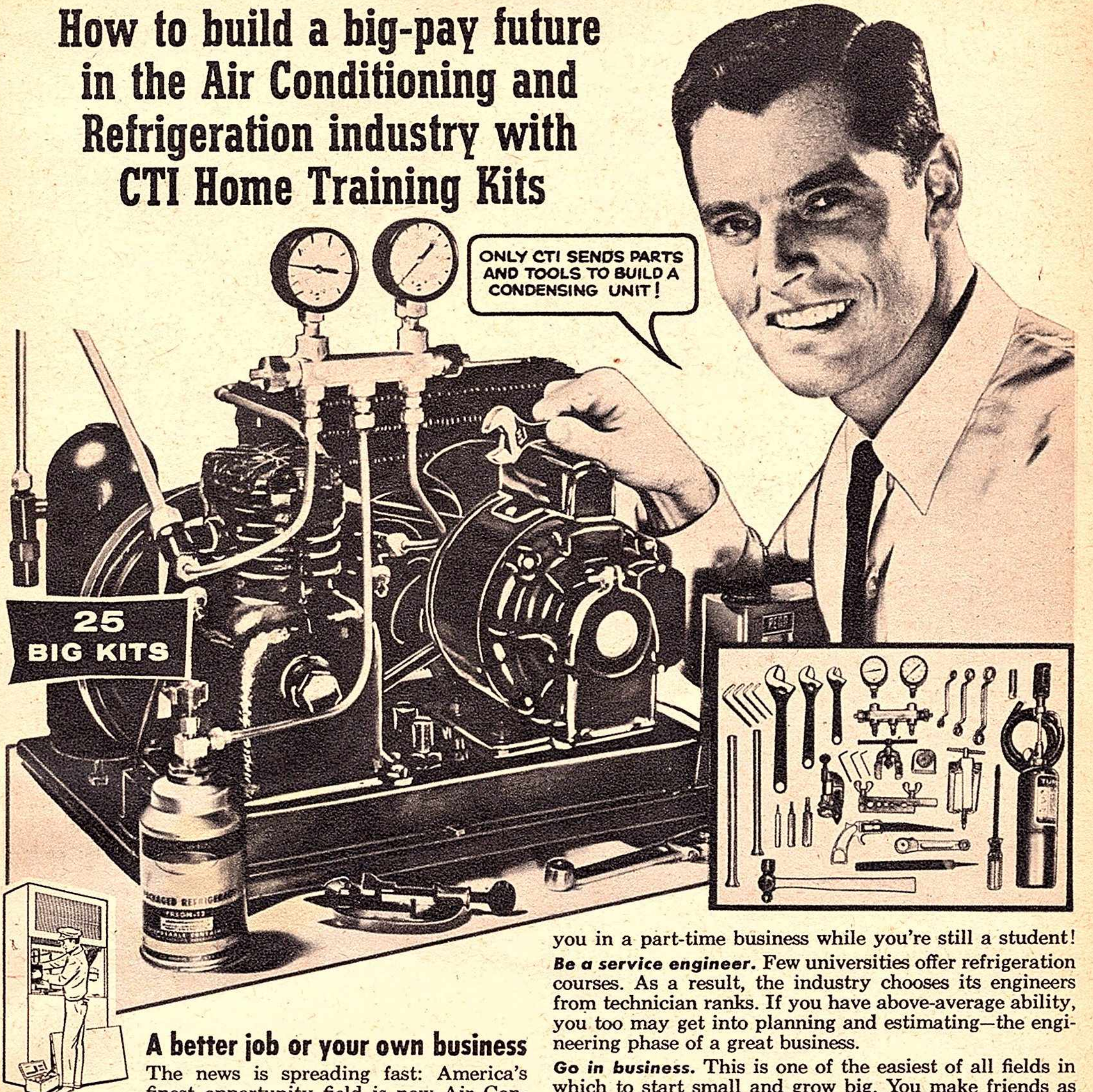
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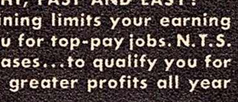

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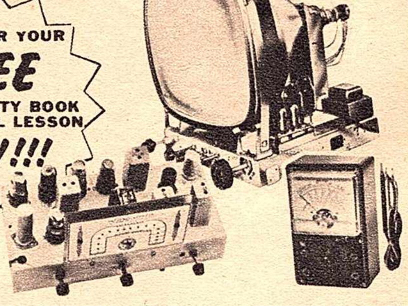

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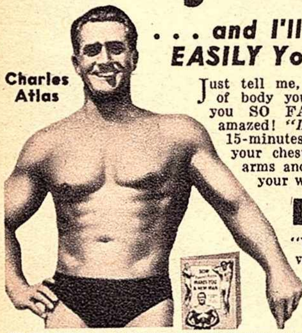
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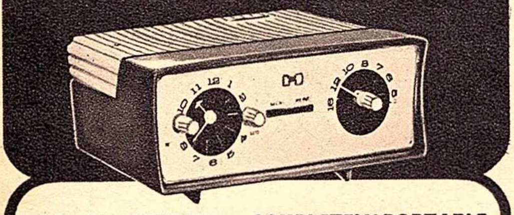

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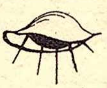

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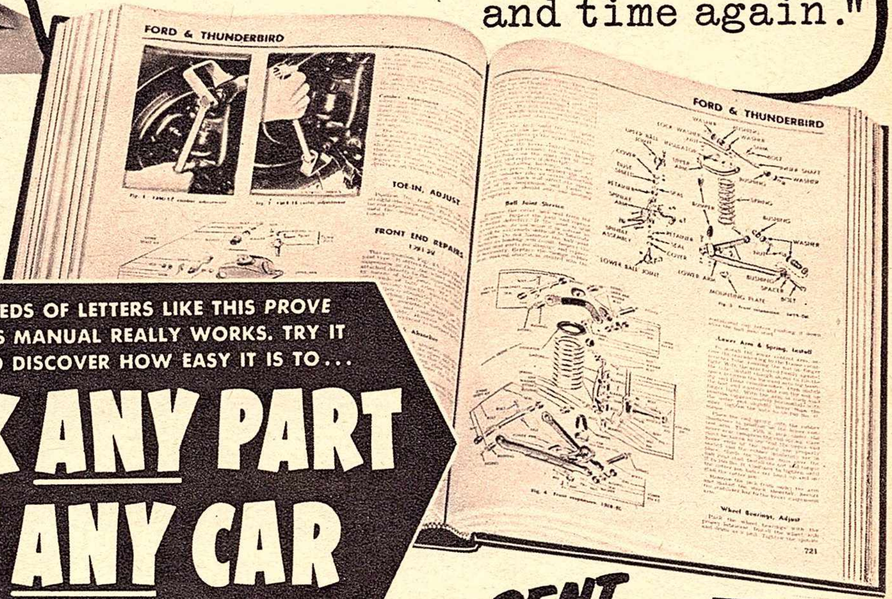

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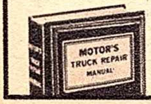

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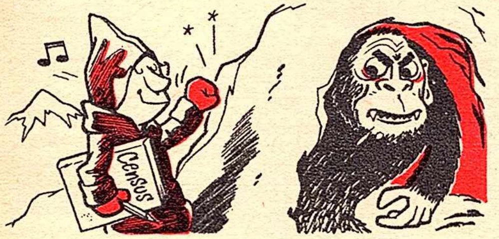
Latest Figures



Could you tell me how many people there are in Tibet?

Jody Rivais
Columbus, Ga.

One million, not counting Abominable Snowmen, Red Chinese or food-plan salesmen.

Ice Yachting Clubs

After reading the how-to-build article about Frostfish, by Cal Smith, in the Nov. MI, and Faster Than The Wind, by Laurence M. Whyte, in the Jan. MI, many readers became interested in joining ice yachting clubs. So here are some addresses:

Mr. John Childs, Sec'y., Eastern Ice Yachting Assn., 527 Main St., New Rochelle, N. Y.

Mr. James Robinson, Sec'y., Northwestern Ice Yachting Assn., Box 159, RFD 1, Richland, Mich.

International Skeeter Assn., 2255 Sherman Ave., Madison 4, Wis.

Mr. Ralph Templin, Sec'y., DN-60 Class, 21207 Redmond, East Detroit, Mich.

Mr. Frank Hansa, Sec'y., Yankee Ice Yacht Assn., 33 W. 42nd St., New York 36, N. Y.

Fipples For Brazil

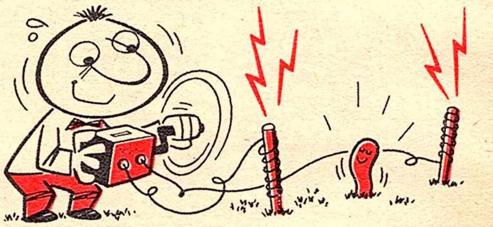
SANTA CATARINA
BLOWGUN AND CHAMBER MUSIC SOCIETY

On page 98 of your MI of June, 1957 we found an article on the English-made woodwind recorder, the fipple. We wrote to the Dolmetsch Company for information on making them ourselves but they weren't interested. Why should we think of making them when they can be bought? Well, the sad answer is terrific duties on imports and months waiting for things. The best way to get anything is to have someone bring it with him. So we would like to contact someone traveling from England or the U.S.A. to Brazil, or someone with information on making fipples, recorders or any other unusual instruments.

L. C. Boddy
Missionary
Caixa Postale 365
Joinville, Santa Catarina
Brazil

It seems too bad that anybody who wants to make a fipple or play a fipple shouldn't get to do it. Any fipplists here or in Blighty care to contact these jungle cats?

Here's Your Worm Caller



Still looking for a worm signaller? The one above is made with a magneto telephone generator which may be purchased at almost any surplus store for $2.50. Connect wires to the "hot" terminals. Pour water in the ground near the rods to make a better contact.

Dennis L. Radke
Oregon City, Ore.

Reader Radke is kindly answering a letter in the March '59 MI asking for an electric worm digger with a portable power source.

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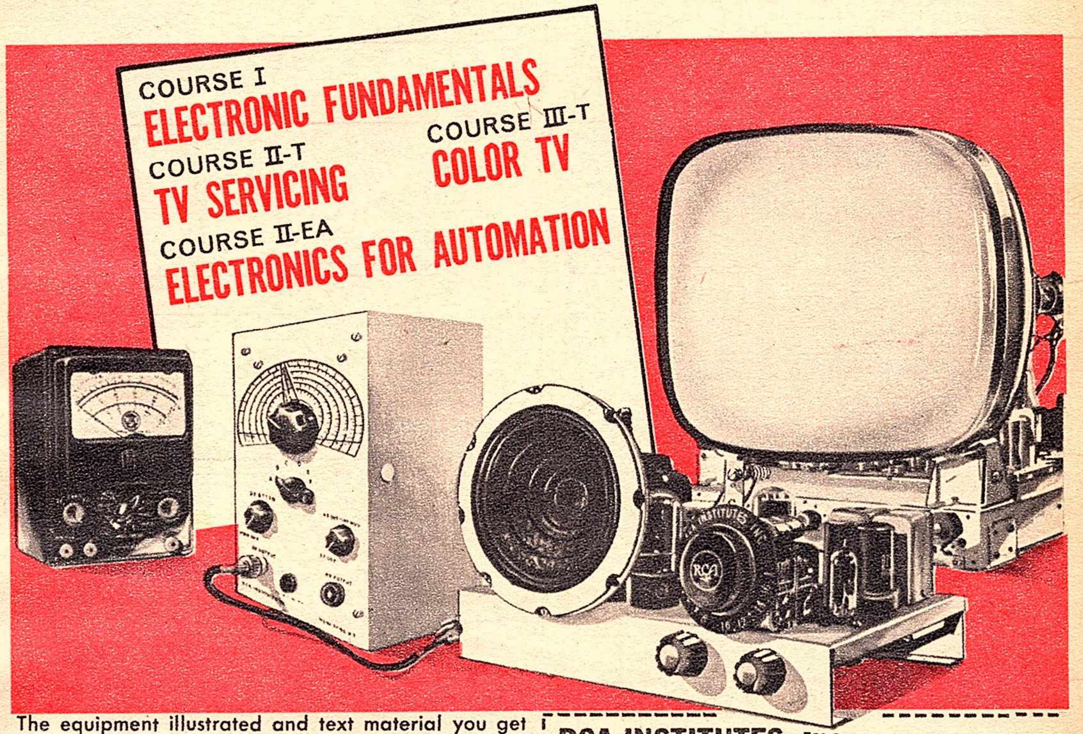
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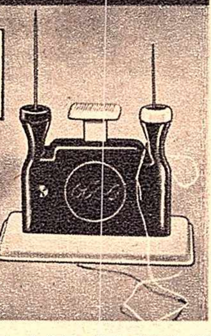

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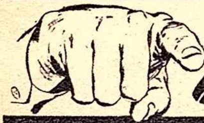

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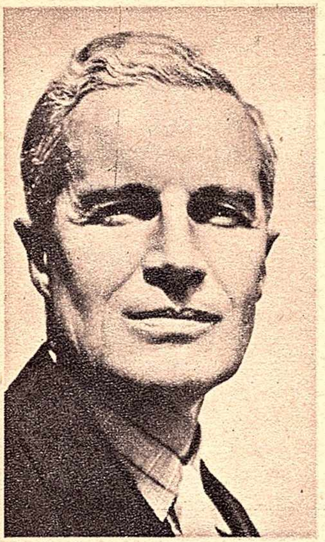


I'd like to give this to my fellow men...

while I am still able to help!

I was young once, as you may be—today I am older. Not too old to enjoy the fruits of my work, but older in the sense of being wiser. And once I was poor, desperately poor. Today almost any man can stretch his income to make ends meet. Today, there are few who hunger for bread and shelter. But in my youth I knew the pinch of poverty; the emptiness of hunger; the cold stare of the creditor who would not take excuses for money. Today, all that is past. And behind my city house, my summer home, my Cadillacs, my Winter-long vacations and my sense of independence—behind all the wealth of cash and deep inner satisfaction that I enjoy—there is one simple secret. It is this secret that I would like to impart to you. If you are satisfied with a humdrum life of service to another master, turn this page now—read no more. If you are interested in a fuller life, free from bosses, free from worries, free from fears, read further. This message may be meant for you.

By Victor B. Mason

I am printing my message in a magazine. It may come to the attention of thousands of eyes. But of all those thousands, only a few will have the vision to understand. Many may read; but of a thousand only you may have the intuition, the sensitivity, to understand that what I am writing may be intended for you—may be the tide that shapes your destiny, which, taken at the crest, carries you to levels of independence beyond the dreams of avarice.

Don't misunderstand me. There is no mysticism in this. I am not speaking of occult things; of innumerable laws of nature that will sweep you to success without effort on your part. That sort of talk is *rubbish!* And anyone who tries to tell you that you can *think* your way to riches without effort is a false friend. I am too much of a realist for that. And I hope you are.

I hope you are the kind of man—if you have read this far—who knows that anything worthwhile has to be *earned!* I hope you have learned that there is no reward without effort. If you have learned this, then you may be ready to take the next step in the development of your karma—you may be ready to learn and use the secret I have to impart.

I Have All The Money I Need

In my own life I have gone beyond the need of money. I have it. I have gone beyond the need of gain. I have two businesses that pay me an income well above any amount I have need for. And, in addition, I have the satisfaction—the deep satisfaction—of knowing that I have put more than three hundred other men in businesses of their own. Since I have no need for money, the greatest satisfaction I get from life, is sharing my secret of personal independence with others—seeing them achieve the same heights of happiness that have come into my own life.

Please don't misunderstand this statement. I am not a philanthropist. I believe that charity is something that no proud man will accept. I have never seen a man who was worth his salt who would accept something for nothing. I have never met a highly successful man whom the world respected who did not sacrifice something to gain his position. And, unless you are willing to make at least half the effort, I'm not interested in giving you a "leg up" to the achievement of your goal. Frankly, I'm going to charge you something for the secret I give you. Not a lot—but enough to make me believe that you are a little above the fellows who merely "wish" for success and are not willing to sacrifice something to get it.

A Fascinating and Peculiar Business

I have a business that is peculiar—one of my businesses. The unusual thing about it is that it is needed in every little community throughout this country. But it is a business that will never be invaded by the "big fellows". It has to be handled on a local basis. No giant octopus can ever gobble up the whole thing. No big combine is ever going to destroy it. It is essentially a "one man" business that can be operated without outside help. It is a business that is good summer and winter. It is a business that is growing each year. And, it is a business that can be started on an investment so small that it is within the reach of anyone who has a television set. But it has nothing to do with television.

This business has another peculiarity. It can be started at home in spare time. No risk to present job. No risk to present income. And no need to let anyone else know you are "on your own". It can be run as a spare time business for extra money. Or, as it grows to the point where it is paying more than your present salary, it can be expanded into a full time business—overnight. It can give you a sense of personal independence that will free you forever from the fear of lay-off, loss of job, depressions, or economic reverses.

Are You Mechanically Inclined?

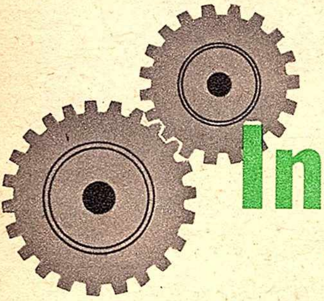
While the operation of this business is partly automatic, it won't run itself. If you are to use it as a stepping stone to independence, you must be able to work with your hands, use such tools as hammer and screw driver, and enjoy getting into a pair of blue jeans and rolling up your sleeves. But two hours a day of manual work will keep your "factory" running 24 hours turning out a product that has a steady and ready sale in every community. A half dollar spent for raw materials can bring you six dollars in cash—six times a day.

In this message I'm not going to try to tell you the entire story. There is not enough space on this page. And, I am not going to ask you to spend a penny now to learn the secret. I'll send you all the information, free. If you are interested in becoming independent, in becoming your own boss, in knowing the sweet fruits of success as I know them, send me your name. That's all. Just your name. I won't ask you for a penny. I'll send you all the information about one of the most fascinating businesses you can imagine. With these facts, you will make your own investigation. You will check up on conditions in your neighborhood. You will weigh and analyze the whole proposition. Then, and then only, if you decide to take the next step, I'll allow you to invest $15.00. And even then, if you decide that your fifteen dollars has been badly invested I'll return it to you. Don't hesitate to send your name. I have no salesmen. I will merely write you a long letter and send you complete facts about the business I have found to be so successful. After that, you make the decisions.

Does Happiness Hang on Your Decision?

Don't put this off. It may be a coincidence that you are reading these words right now. Or, it may be a matter that is more deeply connected with your destiny than either of us can say. There is only one thing certain: If you have read this far you are interested in the kind of independence I enjoy. And if that is true, then you must take the next step. No coupon on this advertisement. If you don't think enough of your future happiness and prosperity to write your name on a postcard and mail it to me, forget the whole thing. But if you think there is a destiny that shapes men's lives, send your name now. What I send you may convince you of the truth of this proverb. And what I send you will not cost a penny, now or at any other time.

VICTOR B. MASON
1512 Jarvis Ave., Suite M-4-C
CHICAGO 26, ILLINOIS



Invention Clinic

Joseph H. Kraus

In this column each month Mr. Kraus will answer as many letters as space permits on those subjects he feels to be of widest general interest. Time does not allow him to reply to any letters except those printed here. Address your questions to the Invention Clinic, *Mechanix Illustrated*, 67 West 44 St., New York 36, N. Y.

Multiple Die Cutter

Ralph P. Bagdigian of Reading, Mass., sends copies of his two patents for machinery to cut various sizes of greeting cards and the like from sheets of material. What kind of company would be interested?

There are about 19 companies in the U.S. which make machinery for this purpose. It might be advisable for you to send descriptions of your invention to each of them. Unless you have claims that engineers might consider outstanding, your chances of a sale are not rosy. Remember that they have their own machinery which now is being produced and sold.

Valve System For Gas Engine

Dean Dunlap of Franklin, Neb., says he has designed a valve system for gas engines that is simpler in construction and eliminates the major portion of present valve malfunctions. Is there a market for such a system?

Claims like this have been made many times before. They need to be substantiated, and you must be sure that your system has not been patented by others. Chances for acceptance by a manufacturer are not good unless you have something of revolutionary value. The cost of tooling for a new design and the educating of servicemen is too great.

INVENTOR'S TIP OF THE MONTH

Foods, paints, cosmetics, insect sprays, cleaning solutions, plant chemicals and dozens of other products are now being sold in pressurized containers. Some bright person should invent and market a refillable container to take nearly any pourable material. It could be pressurized with chemical tablets, bottled gas, or a simple mechanical system could be employed.

Telephone Cover

Barbara Pina of Honolulu, Hawaii, has designed a special-purpose cover for telephones. Is this idea worth proceeding with?

Yes, it is, even though many receiver covers have appeared and telephone companies object to them. I believe that if you could introduce your design on the market it would meet with quick acceptance by the people you hope to reach. Start with a patent search; after that, seek a large manufacturer.

Formulas For Weight Control

Grace Zier of Billings, Mont., says she has discovered two formulas which are effective in controlling weight. If she submits these to pharmaceutical companies she may need to relinquish all rights to them. To whom can she turn to learn if they have any market value?

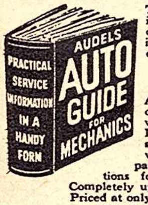
Maybe you could encourage your local college to conduct some tests with overweight mice. Then if the reports establish the safety and effectiveness of your formula, you might be able to negotiate a deal with some firm. It won't be easy.

Toy Cannon

Fred G. Hofmann of Miami Beach, Fla., has developed a toy cannon which fires a mixture of hydrogen and oxygen. Since the basic

[Continued on page 21]

WHAT ALL AUTO MECHANICS WANT TO KNOW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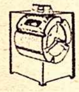

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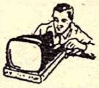

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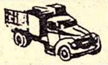

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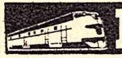

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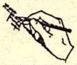

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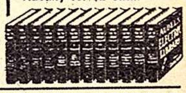

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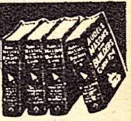

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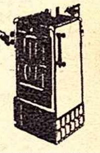

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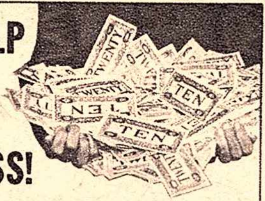

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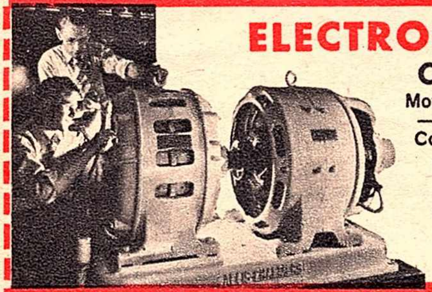

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Invention Clinic

[Continued from page 18]

principles used are so well known, would a patent application be worth while?

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Your search report should have included the toy carbide cannon that can be purchased in large toy stores and is more closely related to your idea. Buy one, examine it and compare it with your design. Then see if you can make yours for one fifth of the price you paid.

Humane Animal Trap

James Stamm of Grand Bahama Island, Fla., has designed and built a trap for catching birds and small animals alive. Should he invest in a patent?

There are traps on the market which catch small animals alive, so I am somewhat dubious about the great need for another. However, your design differs considerably from those I have seen. It looks as though it might damage the wing of any bird that does not rest firmly on the trigger mechanism. On the other hand, your design might double as a crab trap. Additional testing of both types of use is in order before you apply for a patent. This idea seems worthy of more investigation.

Cigarette Lighter

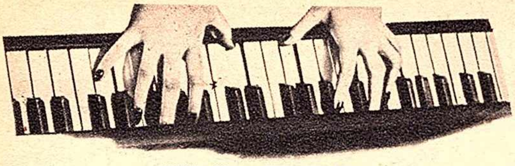
John Scala of Toronto, Ontario, has nearly completed an automatic cigarette lighter for cars. It takes up to a pack of cigarettes and works from the vacuum of the motor. Is there any point in furthering it?

Forget it. A device which does the same job has been on the market for many years.

Centrifugal-Bladed Impeller

Jacob S. Jake of St. Clair Shores, Mich., sends diagrams and description for a centrifugal-bladed impeller to be applied to compressors and forced draft fans. What do I recommend?

Your blade design is similar to an old and not too popular style of windmill that never was noted for its efficiency. But you are using a combination of drives which might give added advantages. Perhaps your best procedure would be to make a model and test it.



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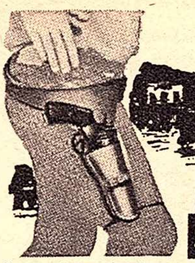

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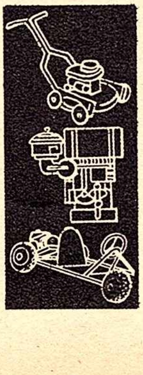

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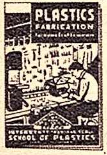

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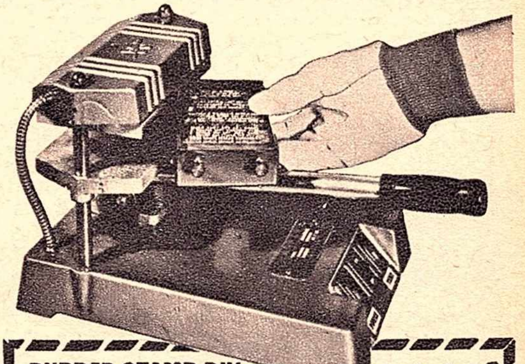

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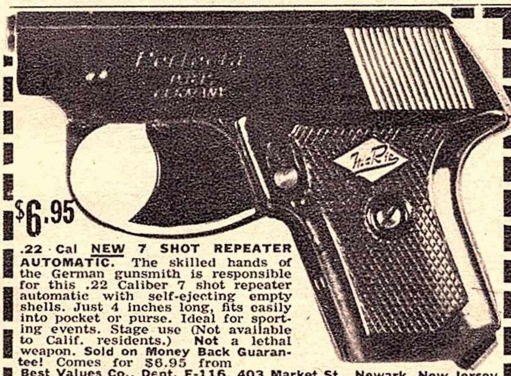

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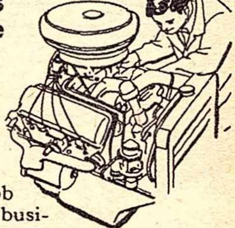

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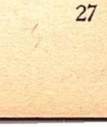

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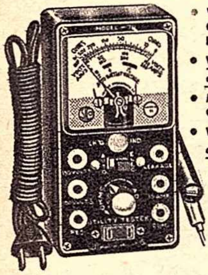

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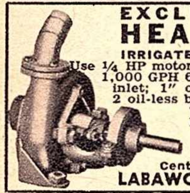

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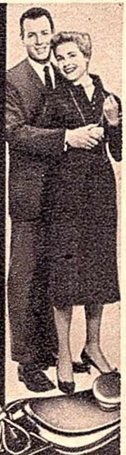

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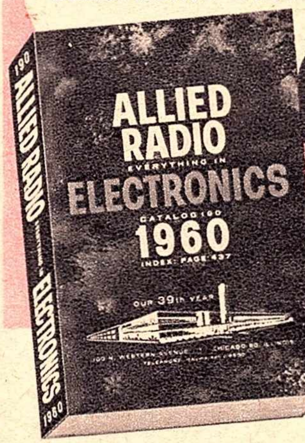

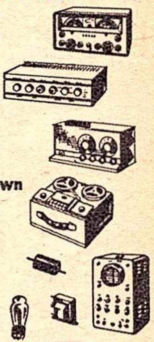

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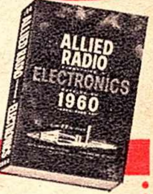

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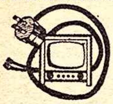

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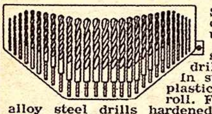

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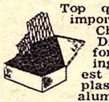

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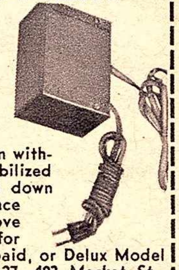

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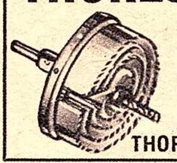

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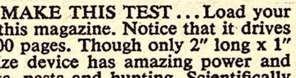

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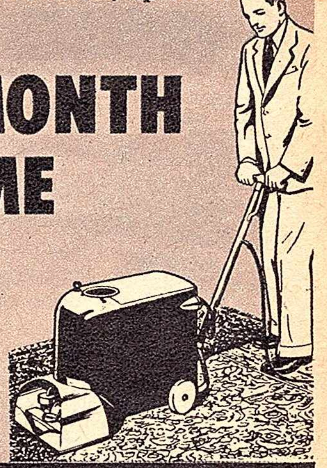

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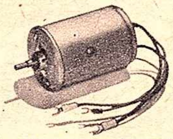

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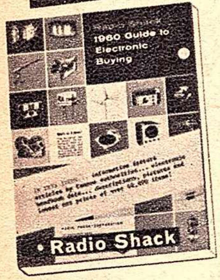

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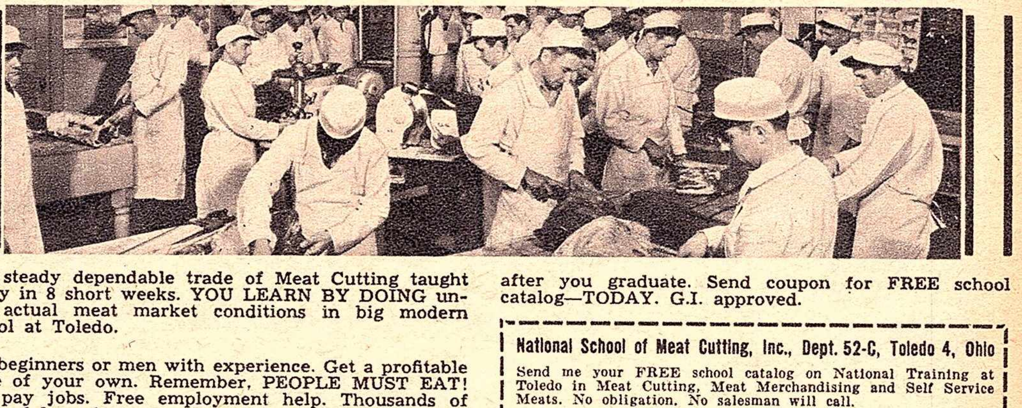

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SAWDUST—EARTH Used Building with Strange Durable Plastic. 800% Profit. Bays Laboratory, Chinle, Arizona.

FRANCHISES MAKE Profits! Have your own prosperous franchise business. Opportunities nationwide for distributors, dealers, agency operators. Write today. National Franchise Reports, MI-528, 333 North Michigan, Chicago 1.

WANTED: HOME producers, to be subcontractors. Cast plastic products for manufacturers in our Clearing House Service. Thousands of easily-made items required. Cash in at home, without previous experience. Plastic Service Associates, Dept. 3-MI, East Boston 28, Mass.

BUY DIRECT from factories—Appliances, Cameras, Watches! Free details! Cam Co., 6810MI-20th Ave., Brooklyn 4, N. Y.

MAKE MONEY Clipping Newspapers. Write Newscraft, BMI-983-E. Main, Columbus 5, Ohio.

QUICK MONEY! "Repairing Car Batteries." At home! Easy too! Free Details! Batteryman, Penrose, Colo.

IF YOU Like Motorcycles And Money then send for Harley-Davidson Dealership Book on how to become a franchised dealer of motorcycles and a new line of motor scooters. Here's a chance to own your own business with a very modest investment. The youth market is beginning to explode and the next few years promise a chance to cash in on it. Write for free illustrated Dealership Book today. Harley-Davidson Motor Company, Dept. MI, Milwaukee 1, Wisconsin.

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IMPORT-EXPORT OPPORTUNITY, profitable, world-wide mail-order business from home without capital; or travel abroad. Established world trader ships instructions for no-risk examination. Experience unnecessary. Free details. Mellinger, Dept. C753, Los Angeles 24, Calif.

BIG MONEY—Operate own Fix-it Shop. Service household appliances, motors, mowers, saws, skates, etc. Free Book. Christy Trades School, A-8606, 3214 Lawrence, Chicago 25.

LEARN PROFESSIONAL TV Servicing in one week! Fabulous new simplified system. No big expense. No studying, No tools or equipment. Spare, full time. Own your own big profit business! Save! Amazing but true! Free! Write, TV Systems, Dept. DC-153, 1038 So. LaBrea, Los Angeles 19, Calif.

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OPERATE PROFITABLE Mailorder Business. Write! Liberty, 210-MIM6 Fifth Ave., New York 10, N. Y.

MAKE EASY Money Addressing—Mailing! Pleasant Work. Write Merrill Histand, Box 182B1, Hatfield, Penna.

MI Classified Advertisements

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LEARN FASCINATING Hobby—Business Engraving Plastics! New "Dupliscaler" engraver discloses $5 hour Protitunities! Details, sample 20¢. Desco Distributors, 5262 MI Van Nuys, Van Nuys, Calif.

REPAIR HYDRAULIC Jacks. Earn high wages in this non-competitive field. Work in your garage or basement, full or part-time. Ideal sideline. Details free, Write: Hydraulic Parts Supply, Box 4104, El Paso, Texas.

MAKE $46 FROM Square Foot Plywood; Jigsaw necessary. Free Details. Woodet, Bridgewater, Mass.

MONEY FROM Your Mailbox Daily, Free Details. Write Wayne's Service, 3016-8 Channing N.E., Washington 18, D. C.

MECHANICALLY INCLINED? Want security, business, prestige, high pay, and quickly? Raymond Adcox, 2210-A North 48, East St. Louis, Illinois.

HAVE HOME Mail Business! We Supply Literature, Lists—Fill Your Orders—Help You. Write: Gateway, Box 397, Forest City, N. C.

OPERATE MAILORDER Folio Business. Free details. Ballard, MI-1834 Edgeland, Louisville 4, Ky.

FREE BOOK "609 Odd, Successful Businesses." Box 1001-MIR, Evanston, Ill.

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FOREIGN JOBS—Latin America, Alaska, Canada, up to $1500 monthly. Up-to-date 1960 Foreign Service Directory gives complete information; hot list of firms hiring for Military and Civilian Construction, Aircraft, Oil, Exporters-Importers, Mining. How-When-Where to apply. 12th successful year. $1.00. Global Reports, Box 8873-MI, Los Angeles 8, Calif.

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WANT A good overseas or stateside job with higher pay??? Men, women. Act now!! Transportation paid. Free information. Employment Headquarters, 79 Wall Street, Dept. 14-A, New York 5.

FREE INFORMATION — USA Overseas Jobs, High Pay. Transportation. Futures, Dept. L, 215 West 34th Street, New York City 1.

LATEST INFORMATION — Civil Service jobs—mechanical, clerical, professional—overseas, U.S.A. List $1.00. Civil Service Bulletin, 115R Haypath Road, Plainview, New York.

WANTED, MEN, Women, Raise bait for us at home. Full, spare time. Doesn't take up space. We furnish everything. Sherwood, Dept. V-1, Monmouth, Maine.

LATEST FOREIGN Jobs—Highest Wages. Unlimited opportunities. Laborers, construction, electronics, oilfields, aviation, civil service, $2.00 (COD's accepted.) America's leading foreign employment researcher, Plus: South America, Alaska, Venezuela listings. Researcher, Box 4912, Baltimore 20, Maryland.

JOBS GALORE! 1960 biggest year here! Employers hiring now! List $1.00 airmailed. Wayne, Box 9123, Akron 5, Ohio.

JOBS ON Ships and Yachts Traveling Foreign Countries. Davenport's, 1354-M, GPO NY 1, NY.

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MAKE EXTRA Money—Big Cash Commissions plus premiums for you and your customers. Sell Advertising Book Matches—sensational new Tenorama, Glamour Girls, Hillbillies; dozens others. All sizes—Quick daily sales; big repeat business. Free Master Kit makes selling easy—no experience necessary. Superior Match, Dept. FX-360, 7530 Greenwood, Chicago 19.

BIG MONEY Possible, operating home mailing and addressing service! Full, sparetime! Interesting details, free. Direct Mail Service, Box 581, Bakersfield 12, California.

MEN—WOMEN! Start Money-Making Plastic Laminating Business at home in spare time. Material that costs 11¢ brings back $2.58. No canvassing or selling but mail orders bring in $20 a day. Write for full particulars Free. Rush name on postcard to Warner, Room CL-4-A, 1512 Jarvis, Chicago 26, Ill.

BUSINESS OF your own. Earning potential as high as $40,000 annually. Issued on $12,500 base. No merchandise to buy. Send for free explanatory booklet. Harrell & Company, Box 8-FF, Louisville, Ill.

START YOUR Own Business On Credit (U. S. and Canada). Your own boss. 1383 Dealers sold $5,000 to $33,500 in 1958. We supply stocks, equipment on credit. 200 home necessities. Sales experience unnecessary. Pleasant profitable business backed by world-wide industry. Write Rawleigh's, Dept. C-U-MOM, Freeport, Ill.

RAISE GOURDS, fascinating, easy to grow, commercially profitable. Small capital starts you. Free details. Joycrafts, Box 186, Covina, California.

MAKE BIG Money Selling Books by Mail! Free details. Write today! Direct Mail Service, Dept. MI, Box 581, Bakersfield, California.

VENDING MACHINES—No selling. Operate a route of coin machines and earn amazing profits. 32-page catalog Free! Parkway Machine Corporation, Dept. 15, 715 Ensor St., Baltimore 2, Md.

DETECTIVES — EXCELLENT Opportunities. Experience unnecessary. Detective Particulars free. Write, George Wagoner, 125-J West 86th, New York 24.

SELL DIAMONITE Gems; more brilliant than diamonds. Credit arranged. Catalog 10¢. Diamonite, 2420-X 77th, Oakland 5, California.

EARN $240.00 A Month at home, spare time doing only Two $5.00 Invisible Mending jobs a day. Big money paid for service that makes cuts, tears disappear from fabrics. Steady demand. Details free. Fabricon, 6256 Broadway, Chicago 40, Ill.

100% PROFIT SELLING reconditioned spark plugs. Free Sample. Lee, 1608-G Roberts, Houston 3, Texas.

$400.00 EVERY WEEK. Sell two duplicators a day. Print five colors each turn of the crank. Vari-Color, Box 3M-31, Shawnee, Oklahoma.

ATTENTION! MEN, Women! Earn extra cash, address advertising postcards. Langdons, Box 41107-M, Los Angeles 41, Calif.

EASY TO start rubber stamp business at home in spare time. Make up to $9.80 an hour without experience. Facts free. Write to Roberts, 1512 Jarvis, Room CR-4-A, Chicago 26.

PROFITABLE HOMEWORK! Guaranteed Earnings. No Selling. Everything Supplied. Elvee, 556 Beacon, Manchester, N. H.

INVISIBLE REWEAVING: $5 in one hour possible reweaving burns, tears, mothholes. Spare-full time. Free details. Skil-Weave, Dept. WC-363, 335 W. Madison, Chicago 6.

MAKE $5,000 YEARLY sparetime raising mink, chinchillas, nutria, etc. Free booklet reveals proved plans. Write: Furs, 588 Mt. Pleasant Road, Toronto 3, Canada.

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$200 WEEKLY BUYING Gold. D'Amico, 24 North Wabash-D Ave., Chicago 2.

MAKE MONEY Clipping Newspapers. Write Newscraft, MI-983-E. Main, Columbus 5, Ohio.

PROFITABLE HOME Mail Order Business! Particulars Free. Progressive, Box 422, Raymond, N. H.

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MAKE BIG Easy Profits making costume jewelry at home in spare time! Quick, easy to make; easier to sell! Details Free! Don-Bar, 3511 W. Armitage, Dept. C-212, Chicago 47, Ill.

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MAKE MONEY Writing Short Paragraphs! No tedious study. I tell you what to write, where and how to sell; and supply list of editors buying from beginners. Many small checks add up quickly. Write to sell, right away. Send for free facts. Benson Barrett, Dept. C-78-N, 7464 Clark, Chicago 26.

MAIL TRADE Magazine as moneymaking opportunities galore. Sample 25¢. Donovan, 79-M Greenbelt, Levittown, New York.

$100 WEEKLY IN unique new profit sharing mailorder business. Home Business Digest, 3026 North Waterloo, Chicago 14, Illinois.

MAKE EASY Money Addressing-Mailing!! Pleasant Work. Write: Merrill Histand, Box 182PE, Hatfield, Pa.

START BIG-PAY Business At Home in spare time. No experience needed to operate little table-top machine for bronzing baby shoes. Make $5.46 profit on every pair. Full particulars Free. Send postcard to Mason, 1512 Jarvis, Room CM-4-A, Chicago 26, Ill.

FORTUNES MADE by prospectors! We teach you! Recognize valuable mineral deposits in your home area. Free information. Modern Prospector, 3433 Essex Road, Cheyenne, Wyo.

$75.00 WEEKLY POSSIBLE mailing catalogs. Roe, 2317G Marshall, Chicago 23, Ill.

• • • PROFITABLE OCCUPATIONS

VENDING MACHINES—No selling. Operate a route of coin machines and earn amazing profits. 32-page catalog Free! Parkway Machine Corporation, Dept. 16, 715 Ensor St., Baltimore 2, Md.

DETECTIVES—MAKE Secret Investigations. Interesting occupation. Write, George Wagoner, 125-J West 86th, New York 24.

FREE PICTURE Folder, "How to Make $3,000 Yearly, Sparetime, Backyard, Raising Earthworms!" Oakhaven-3, Cedar Hill, Texas.

$5,000 FROM HALF Acre growing Ginseng, crop bought. Particulars 10c. Associated Growers, Sperling, Manitoba.

SHARPEN-SCISSORS, PINKERS. Inexpensive outfit. Clipper sharpener. Blackhawk, Sheldahl 6, Iowa.

HOUSEWIVES WANTED! Big money. Spare or full time cake decorating and candy making. Turn your kitchen into a gold mine. Complete instruction, learn and earn at home. Write for free facts: Candy And Cake, Dept. 652, Fallbrook, California.

LEARN PIANO Tuning At Home. Big earnings. Free information. American School Piano Tuning, Box 707, Gilroy, California.

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NEW MULTICOLOR Wholesale Catalog — automobile catalog — and others. Housewares, appliances, refrigerators, freezers, washers, dryers, television, radios, furniture, clothing, luggage, binoculars, phonographs, recorders, cameras, projectors, typewriters, sewing machines, power tools, toys, sporting goods, watches, jewelry — name brands — huge discounts. Postcard: Selbyco, Decatur 130, Illinois.

TRANSISTOR RADIOS, Deluxe 4's, 6's. $12.75 up. Kalenak, 1100 Heeney, Johnstown, Penna.

WAR SURPLUS Bargains! New government releases arrive constantly. Save Up to 80%. Blankets, boots, cots, tents, wearing apparel, etc. Send for Free War Surplus Catalog, Sioux Falls Surplus Store, Sioux Falls, South Dakota.

LARGEST WHOLESALE supply in U. S. Free catalogs. Furniture, clothing, appliances, housewares, automobiles and accessories, farm equipment, tools, hobby supplies, new products, imports. Free details. Associated Wholesalers, Box 2068M-2, Sioux City 4, Iowa.

BUY WHOLESALE: 100,000 Nationally Advertised Products. Appliances, Cameras, Sporting Goods, Housewares, Watches, Typewriters, Tools, Clothing, etc. Discounts to 60%. Buy-Rite, Box 258, Hawthorne 12, New Jersey.

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!!FREE!! BIG 64 page Leathercraft catalog. Hundreds of new items. Write MacPherson Bros. Leather Company, Dept. M, 730 Mission St., San Francisco 3, Calif.

BEAUTIFUL GIFT Catalogue. New ideas, accurate prices. 25¢. Jack Hindman, R#2, Coloma, Michigan.

SAVE—WHEN buying new car. We show you how. Literature free. Price Research Bureau, Box 15, Tonawanda 4, N. Y.

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60% PROFIT ON Cosmetics—Famous nationally advertised Hollywood Cosmetics pay 60%! Make $25 day up! Hire others. For free samples, details, write Studio Girl, Glendale, Calif., Dept. 5003GX.

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"8 MISTAKES PARENTS Make." Every parent should have this new book about child training. It is free; no obligation. Simply address Parents Association, Dept. 943, Pleasant Hill, Ohio.

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MAKE EASY Money Addressing—Mailing!! Pleasant work. Write Merrill Histand, Box 182WI, Hatfield, Penna.

TRY YOGHURT to out-love, out-live, out-work others. Look under miscellaneous.

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SCIENCE MATERIALS, Private, Industrial Laboratories. Catalog 25¢. Laboratory Sales, Box 161-C, Brighton, Mass.

EXPERIMENTERS:—"TERRIFIC Bargains" Scientific Catalog — 25¢. Hagenow Laboratories, Manitowoc, Wisconsin.

CHEMICALS AND Apparatus Catalog 25¢. Nu-Age Laboratories, Box 232, Bellmore, N. Y.

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EXCLUSIVE MANUFACTURING Formulas and Processes. List Free. Moon, Martville, N. Y.

LATEST—BEST Formulas. Genuine Moneymakers. Free literature. Kemistry, Park Ridge 40, Ill.

Any FORMULA $3.00. Catalog—Mfg. Treatise 10c. J. Belfort, 192 N. Clark, Chicago 1.

LARGE FORMULA catalog 10¢. Big surprise. Western Chemical, Salem, Oregon.

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SEARCHING FOR Treasure? Transistorized electronic M-Scope locates it. Lightweight. Guaranteed. From $59.50. Easy Terms. Free Catalog. Fisher Research, Dept. C-4, Palo Alto, Calif.

TRANSISTOR TREASURE Detectors, underwater detectors. Many models. Free catalog. Gardiner Electronics Co., Dept. 13, 2545 East Indian School, Phoenix, Ariz.

GOLD-SILVER DETECTORS. Geiger Counters. Violites for tungsten, etc. Best available. Guaranteed. Information Free. Detectron 3-A, Sylmar, California.

TREASURE! MAP, Handbook, 25¢. Locators. Howe, 811 Kansas, Atchinson, Kansas.

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JEEPS—$223.00, TRUCKS—$212.00, Tractors, $68.00, Tools, Guns. Typical Government Surplus Prices. You can buy direct. List of Depots, Procedure, full details only $1.00. New York Enterprises, Wall Street, Box 402-H2, New York 5, N. Y.

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TYPEWRITERS, MIMEOGRAPH, Printing, Adding Machines $25.00 up. Write Dixie Graph, King, N. C.

• • • PRINTING, MULTIGRAPHING, MIMEOGRAPHING

1000 BUSINESS CARDS, Raised Letters. $3.95 Postpaid, Free Samples. John H. Taylor, R.D.2, Box 215, West Middlesex, Pa.

POSTPAID PRINTING free catalog. McDonald, 545 North Oakland, Pasadena 4, California.

FREE BUSINESS Printing Catalog; samples. Howprint, 723-L Eunice, Webster Groves 19, Missouri.

1,000 BUSINESS CARDS, "Raised Letters" $3.95. Samples. Pioneer, MI-3, Island Park, N. Y.

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PRINTING OUTFITS, type, supplies. Send dime for illustrated supply book and samples. Kelsey, Inc., H-57, Meriden, Conn.

MAKE YOUR own self-molding rubber stamps and printing cuts. Plexirubber, Argyle 3, Wisconsin.

RUBBER STAMP Presses, Supplies. Kiewiet, 2025 Barney Road, Kalamazoo, Michigan.

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THREE LINE address stamp, $1.00 Facsimile signature (exact reproduction) 1"x3", or less. $3.50. L. F. Anderson, P. O. Box 2336, Portland 14, Oregon.

THREE LINE with inked pad. Pocket $1.00, deluxe $2.00, indelible $2.00. Donald Messier, Hudson, Massachusetts.

MI Classified Advertisements

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102 DIVERSIFIED WORLDWIDE stamps 10¢. Approvals. Linstamp, St. Catharines 620, Ontario.

FREE — MINT British Colonies from Brunei, Solomon Islands, Negri Sembilan, Sarawak, St. Christopher, Nevis, Trengganu, Gilbert Ellice. Free with approvals. Viking, Great Neck 4, N. Y.

UNITED STATES commemorative collection containing 33 different—10¢. Approvals. White, 516-M Avenue L, Brooklyn 30, New York.

105 BRITISH COLONY Stamps, all different, 10¢. Approvals. Crown Stamp Company 903, Virgil, Ontario.

FREE . . . STAMPS Freaks! World's Largest and Smallest stamp; many other fantastic shapes, sizes, designs. Plus Bonus Collection from Aden to Zanzibar. 115 different genuine foreign postage stamps in all! Collectors' Guide; Approvals; Big Bargain Catalog. Send 10¢ for mailing. Harris Co., Dept. F111, Boston 17, Mass.

ALBUM ONLY 10¢! Hundreds of Spaces! Stampmart Company, Hartford 1, Conn.

1000 DIFFERENT WORLDWIDE Stamps $1.00. Valued over $20.00 Universal, Box 6, Kenosha 10, Wisc.

QUEEN ELIZABETH On Stamps . . . A beautiful collection of 50 different stamps from 22 countries—all bearing the portrait of the Queen of England, 10¢ with approvals. Capital Stamp Co., Ferrysburg 5A, Mich.

225 STAMPS FOR Only 10c! This mammoth value includes Airmails, Pictorials; stamps from strange Countries cataloguing up to 25c each! Also approvals. Mystic Stamp Company, Camden 30, N. Y.

100 DIFFERENT BELGIUM Free. UPU. Brussels Fair, Railroad Stamps Free. Approval applicants only. Trylon, Box 31-M, Brooklyn 30, N. Y.

PENNY APPROVALS; Regardless. Catalogue! Kloster, 4164 52nd St., San Diego 5, Calif.

100 STAMPS 10¢ WITH approvals. Smith, 508-D Brooks, College Station, Texas.

FREE COLLECTIONS—Canada, Philippines, World Wide, many others—each over $5.00 value. Many other attractive premiums Free with purchase of sensational foreign approvals. Topval, Box 486, Redlands, Calif.

307 WORLDWIDE DIFFERENT stamps only 25¢. Approvals. Niagastamp, St. Catharines 673, Ontario.

OLD SCARCE U. S. Seconds On Approval. Slight imperfections, lowest prices. Hernfelder, Clintonhill Sta., Newark 8, N. J.

FREE! $1.00 WORTH, your choice, from first selection. No strings! Adults only. Rush request now. Philatelics, Dept. VF, New Paltz, N. Y.

FREE—ANY Volume Scott's International Albums, Scott's 1960 Catalogues, even Master Global Albums Free when you buy our sensational foreign approvals. Bargain Stamps, Redlands 1, California.

U. S. STAMPS. Giant Bargain Catalog-20¢. Raymax, 35-VK Maidenlane, NYC 38.

25 DIFFERENT COMMEMORATIVES 1893 up 10¢. U. S. Approvals. K & B, Box 70, Brooklyn 23, N. Y.

200 DIFFERENT U. S. Stamps $1.00. Approvals included. Shelron, Box 907-R, New York 8, N. Y.

ADULTS! LIKE Stamps? Then start your own Mail-Order Business. Our Free Guidance Program shows you exactly what to do, makes it easy, profitable for you. Details Free! Columbia, 9268-IM Piney Branch Road, Silver Spring, Maryland.

508 DIFFERENT WORLD-WIDE from Formosa, Morocco, Indonesia, etc., cataloging over $15.00, only 35¢. Offer to Adults Only. Approvals. Littleton Stamp Company, Littleton Q4, New Hampshire.

200 DIFFERENT BELGIUM 50¢—Penny approvals included. Reed, Box 980, Chicago 90, Ill.

WOW! 110 ALL Different Germany 10¢ Zeppelins, Semi-Postals, Airmails, High values, etc. Giant Catalog, bargain lists included with beautiful approvals. Jamestown Stamp, Dept. A30MI, Jamestown, N. Y.

60 DIFFERENT U. S. (30 commemoratives) 25¢. No approvals. Seidenberg, Appleton, Wisconsin.

U. S. LIST Free. Big Discounts. National, Box 60, Boston 1, Mass.

50 DIFFERENT LARGE U. S. commemoratives 10¢ request approvals. Jack Clancy, Box 2187 Portland 14, Oregon.

50 OLD GERMANY 5¢, with approvals. Dancer, B75X3, Mansfield, Ohio.

TRADE YOUR duplicates toward our approvals! (Foreign only.) Complete information, 10¢. Variety Stamps, Box 98-L, Newton Highlands 61, Mass.

1000 DIFFERENT $1.00 (VALUE $20.00) approvals. Jacobsen, Crompond, N. Y.

SPECIAL! OLD U. S., flags, Famous Americans, Presidents, commemoratives with approvals plus free packet, 10¢ handling. Metropolitan Stamps, Box 312EX, Jackson Heights, N. Y.

14,000 DIFFERENT! AMAZING new plan builds your collection systematically, country by country. Only 50¢ weekly. Free details. L. G. Ware, Stepney 22, Conn.

FREE 50 WORLDWIDE mailed with inexpensive approvals. University Stamps, P. O. Box 95, Tamiami Station, Miami 44, Florida.

100 OLD UNITED States between 1861 and 1935, $1.00. Roush Stamps, 51 Chestnut, Mansfield, Ohio.

FREE UNITED States Price List Of Singles, Plate Blocks, FDC's. Introductory Discount. Bailey, 45-M Bromfield, Boston, Mass.

FREE! 25 EGYPT, 5¢ handling, approvals. Bellet, MI-W, Hazel Park, Michigan.

103 DIVERSIFIED BRITISH Colony stamps only 10¢. Approvals. Niagastamp, St. Catharines 673-A, Ontario.

90,000 STAMPS SALE: Terrific bargain lot —hundreds of stamps $1. Extra special $2. Giant assortment including sets. Packets $5. High value packet $3. Samples—something different—amazing literature Free with order. Persile, 436 N. Y. Ave., Brooklyn 25, N. Y.

150 DIFFERENT U. S. Commemoratives $1.00. Carstamps, 739 Ordway, Freeport, Illinois.

UNUSUAL POSTAGE Stamp keychain. 50¢, guaranteed. Ideal gift. Approvals if requested. Abbott's, 222 Front, New Richmond, Ohio.

25 DIFFERENT LARGE American Commemoratives 10¢. With approvals. Linstamp, St. Catharines 620-A, Ontario.

FREE! GIANT Bargain Catalog—New Edition listing thousands of bargains including U. S. and B. N. A. stamps, packets, mixtures, albums, accessories and supplies; sent with beautiful approvals. Jamestown Stamp, Dept. E30MI, Jamestown, N. Y.

OLD U. S.; Foreign Pictorials free with your approval purchases. Stamp Farm, 13-16, Oxford, Wis.

NUDES SET (4)—unusual approvals—10¢. Atlasco, Eisenhower, Racine, Wisconsin.

• • • COIN COLLECTING

BRILLIANT PROOF Sets—1957 $3.75; 1959 $4.50; 1960 $2.75. Retail Guidebook $1.75. Fifteen different Indian cents $2.25. World's Greatest Bargain Catalogue $1.00 (Deductible first $10.00 order). Bebee's, 4514 North 30th, Omaha 11, Nebraska.

COINS FROM Formosa, Vatican, etc., plus foreign banknote, 10¢ with coin approvals. Littleton Coin Company, Littleton S4, N. H.

EIGHT DIFFERENT Indian Cents $1.00. Collector's Bargains, Box 356G, New Hope, Penna.

NEW! REVISED! 1960 Coin Bargain Catalog 25¢! "Prices-Paid" List, $1.00! Sullivan, 50-GC East Sixth, St. Paul 1, Minnesota.

THREE BRILLIANT Uncirculated Mexican Silver Dollars $1.00. Universal Services, Box 675, San Antonio 6-F3, Texas.

FREE BONUS offer! U. S. Bargain list, 10¢ (refundable). Economy Sales, 156 Dean, Mansfield 3, Mass.

32 PAGE DELUXE U. S. coin list 10¢. Stoney, 260 Washington St., Boston 8M, Mass.

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1st Grand Prize: a Mercedes-Benz

300SL
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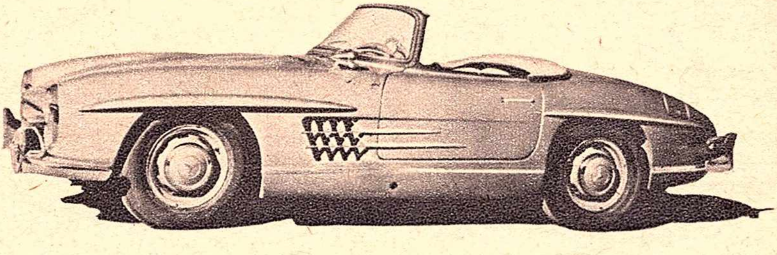
$10,950



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TRUE's $100,000 GLAMOR CAR CONTEST

ENTER NOW!

Get TRUE, the Man's Magazine, at your newsdealer today

WHAT A DIFFERENCE TWO CYLINDERS MAKE! THAT'S WHY YOU'LL LOVE THAT LARK V-8

In the field of domestic engines, two more cylinders make the difference between adequate transportation and spirited performance ➤ And sometimes performance is fun, particularly when the price is just a little more than the "6" ➤ The Lark V-8 in standard form pulls 180 hp at 4500 rpm and 260 ft. lb. of torque at 2800 rpm. With optional 4-barrel carburetor and dual exhausts, you get 195 hp at 4500 and 265 ft. lb. at 3000 so that drivers can turn zero to sixty in just over nine seconds ➤ Economical, too! In last year's Mobilgas Run, The Lark V-8 with automatic transmission topped all other eights ➤ The Lark V-8 is rugged. It runs on five massive main bearings and (here's the hooker), piston travel per mile in high gear (3.31 rear) is only 1380 feet. Engine revs per mile in high gear is an easy 2550 ➤ See your Studebaker Dealer and try The Lark V-8. You'll love it!

***LOVE* THAT LARK BY STUDEBAKER**

MAIL FOR McCAHILL

UNCLE TOM ANSWERS HIS MOST INTERESTING LETTERS IN THIS COLUMN. WRITE TO HIM IN *MECHANIX ILLUSTRATED*, 67 WEST 44TH ST., NEW YORK 36, N. Y.

● *Tom, last night we saw the Corvair and drove the Falcon. We're really interested in a new small car but Detroit is up to its old tricks again. By the time you total up the price tag, it's not $2,000 but between $2,400 and $2,500. I say the small American cars will never compete with the little foreign cars unless they come down in price as well as size.*

Herb Polesie
Santa Monica, Calif.

Last summer when I tried to beat the right answers out of the boys as to what the price tags would be on the small cars after production started, I was assured by both Chevrolet and Ford men that their Corvairs and Falcons would sell for a "hair under $2,000 delivered in New York." When these price tags start inching close to the $2,500 mark it means absolutely no competition whatsoever for cars such as the Volkswagen and Dauphine, which can be bought for roughly $800 less. Some rumors have reached me that dealers are padding the prices in order to keep their bread-and-butter cars (the bigger jobs) from looking overpriced. Anyway, I'm happy I wrote on these pages that at $2,000 or under, the three new compact cars would prove as popular as Marilyn Monroe at a Sing-Sing picnic—but if they allowed the cars to cost much more, their comparative value would become highly questionable.

● *Could you tell me where the famous old Simplex automobile was manufactured?*

George Koch
Baltimore, Md.

New-Brunswick, N. J.

● *Since my knowledge of things mechanical stops after I've plugged in the toaster, I'm not the most likely person to be writing to you but I am an avid reader of yours. Now I have a question I'd appreciate some help on. Recently my husband purchased a 1959 Citroen sedan for me. I have gone through all the back issues of MI but my back-tracking has been useless. Could you tell me when you wrote something on the Citroen?*

Mrs. Amos J. Rogers
Chinchilla, Pa.

We tested the Citroen in Europe for MI back in Sept. '52 but haven't tested one since. Incidentally, you didn't mention what model you own.

● *Sixty years of progress in the automobile business has finally gotten us to the point where the jacks supplied with the cars are practically impossible for anyone to use. Some of the bumper jacks today are a disgrace. I had a flat on my station wagon the other night and just couldn't get the rear off the ground. The stringbean-like jack simply bent like a fresh spring willow. What can we do?*

J. T. Harley
San Francisco, Calif.

Jacks have been getting sleazier and sleazier with all American automobiles. The last good jack I had was on my '53 Lincoln. Wish I'd kept it.

● *I don't know what you know about bikes, but I promised Junior I'd buy him the best bike in the world if he got all A's in Junior High—and it looks like he's going to do it. Since I've been reading your car stuff for years I'd like to ask you what is the world's best bike?*

Harry Fabian
Memphis, Tenn.

My own bike is a Schwinn Paramount and I believe it to be the best-made bike in the world. It's going to cost you a bundle though, Pop—none of that $40 bargain basement stuff. It'll kick hell out of two C-notes but it's worth every dime if you like truly fine machinery.

[*Continued on page 48*]

Sworn statement from CHAS. LEMMING reads:

"After starting my own business I've averaged $100 A DAY —most of it clear profit!"

• If you want to be independent—free from layoffs, bosses—start profitable, year 'round business of your own. **Ours is NOT a lease proposition.** *You own the machine, you work when and where you please, and all the money you take in is your own.* **FREE** *book tells you how.*

MAIL COUPON TODAY FOR FREE BOOK

VON SCHRADER MFG. CO.
312 "D" Pl., Racine, Wisconsin

Without obligation rush your **FREE** booklet about how I can start my own permanent, profitable electric Upholstery Cleaning business.

Name____________________

Address____________________

City__________ Zone____ State________

Not everyone does as well...
Mr. Lemming owns two machines

In city of less than 50,000, Mr. Lemming started his own business after filling in coupon like one below. He averaged $100 a day during first year, some days $200. F. E. Doran grossed $1050 in single month. Geo. Held grossed $300 in one week.

How much you earn depends largely on you. No special skill, no large investment required for our electric upholstery cleaning machine. Start spare time until full time justified. Hire helpers as needed.

NO SHOP NECESSARY • You clean upholstered furniture on customers' premises—homes, hotels, motels, etc. Auto upholstering, too. No hauling; operate from your home. Watch business grow as satisfied customers tell friends. Supplies cost little, profits high.

Comforting Facts about
WOLVERINE WORK SHOES

FOR A JOB THAT'S TOUGH ON SHOES AND HARD ON FEET—CHOOSE WOLVERINE

FOR MORE THAN HALF A CENTURY THE NAME WOLVERINE HAS MEANT COMFORTABLE LONG WEARING SHOES TO FIT YOUR JOB

WOLVERINE SERVICE OXFORDS GIVE YOU DRESS SHOE GOOD LOOKS PLUS WORK SHOE WEAR

IF PERSONAL APPEARANCE IS IMPORTANT ON YOUR JOB, CHOOSE WOLVERINE SERVICE OXFORDS, THEY'LL KEEP YOU LOOKING NEAT ...COMFORTABLY

PLUS THESE COMFORT FEATURES—

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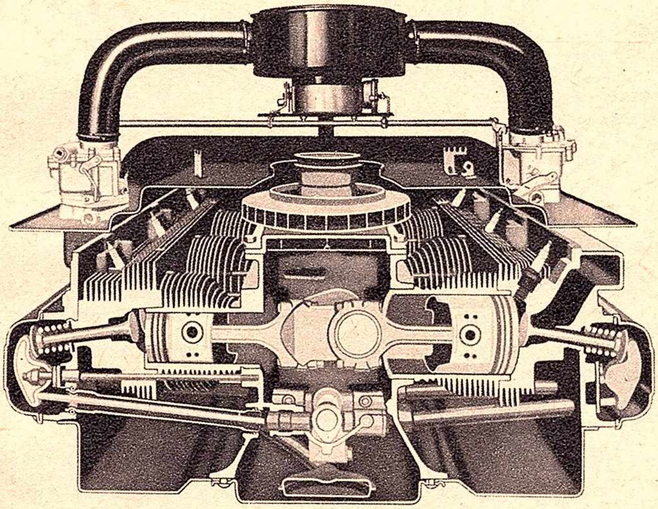
WOLVERINE
ROCKFORD, MICHIGAN

Service Oxfords
Work Shoes • Boots
Safety Shoes

CORVAIR'S A NEW SMOOTHIE

Behind Corvair's array of engineering innovations (*literally behind*) lies its engine: America's first and only rear-mounted air-cooled aluminum "pancake" six. The spec sheet reads like this: 140 cubic inches of displacement, bore 3.375 inches, stroke 2.60 inches, maximum horsepower 80 @ 4400 r.p.m., maximum torque 125 ft.-lb. @ 2400 r.p.m. (Hitch these figures to a car weighing only 2,375 pounds at the curb and you've got yourself a peppery package, if we do say so.)



Anyway, of the four adjectives, we particularly like "pancake." Translated, it means that this is a horizontally opposed six, instead of the conventional in-line type. If you cut the engine crosswise, it would look like the picture.

There are three pairs of cylinders, of course, each working in unison. When one piston is at the top of its stroke, so is its mate. So? Well, Barney Navarro, who's engineering editor of Motor Life magazine and should know about these things, writes "opposed engines (of Corvair's design) are inherently balanced." In other words, each pair of pistons, rods and crank throws balance each other, and there's no need for counterweights. Because this type of engine is inherently balanced, it's inherently smoother than an in-line six. And after all, ultra-smoothness is just what you're after.

As you might suspect, there's precious little of the commonplace in a Corvair engine. Yet there's nothing so radical that it hasn't been proved time and again for reliability. About the only question left now is whether we can build enough of these cuties to fill the demand. One thing you ought to do for sure is to try one out. After that, you'll probably be badgering us to build *you* one. This is a problem we're happy to have. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

That rear engine is just one of the engineering marvels in this new Corvair. Others include the silken smoothness of independent suspension at all 4 wheels . . . a practically flat floor, front and rear . . . briskly competent handling . . . and the ingenious unit combining the engine, transmission and rear axles. Be prepared to spend some time with these wonders when you check out the revolutionary Corvair at your dealer's.

corvair
BY CHEVROLET

Advertisement

Tom McCahill Reports on:

Facts about Replacement Mufflers

Today's automotive tastes have caused very complex designs and, in some cases, some weird engineering. Underslung styling and high compression engines, plus dozens of power-assist gadgets, have become pretty common. However, this has created new problems in maintenance. Let's consider mufflers, for instance.

Typical current hopped-up Detroit gargantuas demand a different type of food than old-time cars. They take to 100-plus octane gas like a cokie to a needle, and they pump out acid-loaded fumes into the muffler system that could eat a hole through it like a rat through cheese. This calls for better-designed mufflers. They must be built to nestle into the maze beneath today's underslung wagons. These problems are doubled when cars are equipped with dual exhaust systems, and all this results in shorter muffler life. Mufflers are the most common replacement item on all modern automobiles. The big question is: What are the muffler kids doing to increase muffler life? The answer is, there are only three things they can do. First, use heavier, thicker steel. Second, design the interior so as to reduce acid-loaded condensation and to avoid hotspots. Third, coat mufflers with corrosive-resistant materials. AP mufflers stand out on all three counts like a well-filled Bikini at a Vermont swimming pool. APs have more and heavier internal parts, up to two-thirds heavier outer shells, up to one-third heavier heads than other mufflers. AP's exclusive Dri-Flow design eliminates cold spots—cuts way down on corrosive condensation. And AP offers more models with rust-resistant coating than any other manufacturer. Yet AP mufflers sell for the same price as the inferior gas traps.

These are among the reasons why AP is the world's largest manufacturer of replacement mufflers. Look for the big red and white AP "Free Muffler Check" sign the next time you need a replacement muffler. More than 100,000 automotive experts from coast to coast install AP mufflers and tail pipes.

THE AP PARTS CORPORATION

18-P AP BUILDING, TOLEDO 1, OHIO

FREE
MUFFLER CHECK
WE
INSTALL
AP LONGER LASTING
MUFFLERS
AND PIPES

Mail For McCahill

[Continued from page 45]

- *Considering your weight, shouldn't you be taller?*

R. B. Arnold
Darien, Conn.

Yeah, about 26 feet.

- *Am considering buying a Judson blower for my 1959 VW which has 8,000 miles on it. I can't take all the Judson sales pitch nor the VW dealer's arguments against. It really takes an independent expert opinion these days to arrive at a decision. May I have yours, please?*

John A. Thoroughman
Chicago, Ill.

I just don't happen to like blowers on a car to be used every day. It's like hitting your arm with a coke needle to wake you up quick.

- *I bought a Labrador Retriever like yours last summer and would like to get somebody to train him so he'll make a good gun dog. How long will this take? Can you recommend a trainer?*

Harold F. Churchill
Pittsburgh, Pa.

To be trained as just "a good gun dog" might only take three or four months, if the dog is bright. If he's stupid, he may never make it. To be trained as a field trial dog will usually require at least two years. However, good trainers will ship him back to you quickly if they feel the dog hasn't got it. Two trainers I can recommend are Bud Hedges of Sag Harbor, Long Island, N. Y., or Orin Benson of Eagle, Wis.

- *Recently I bought an MG TD and it's fine in every respect except that the engine is just worn out? Any suggestions?*

Paul Waters
Buffalo, N. Y.

Sears, Roebuck lists '50-54 TD engines in their catalog. Price: About $250.

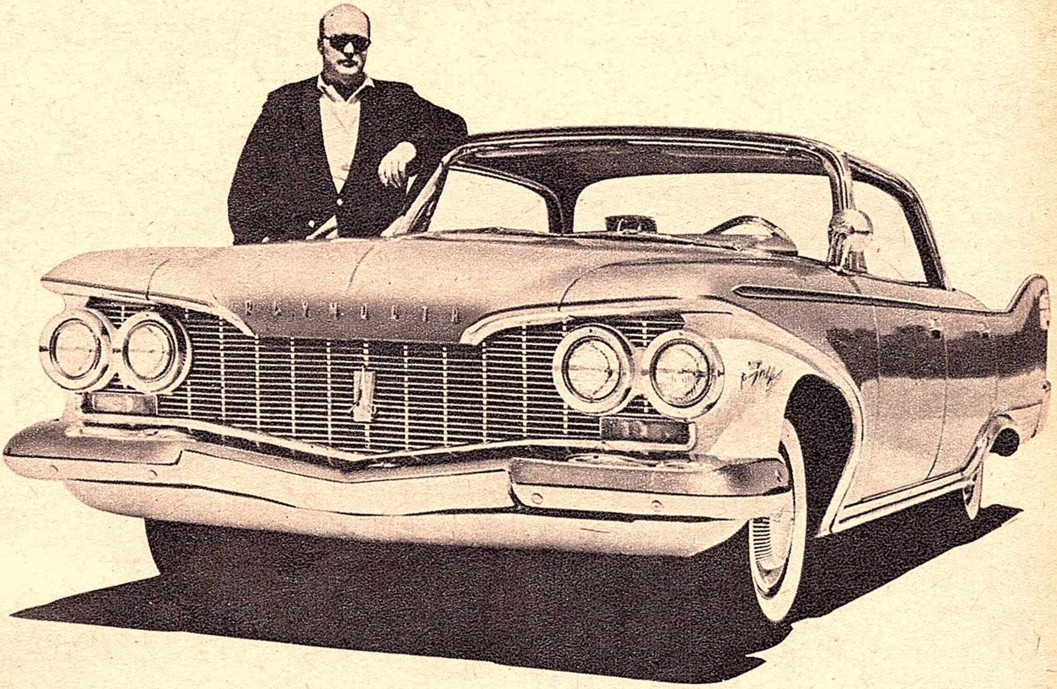
- *Would you accept the Democratic nomination in 1960 for president?*

A. G. Tulley
Oklahoma City, Okla.

President of *what?* The last nomination I accepted got me into a sorority.

- *Bet you can't top this. My husband and I have a new outboard cruiser and one day we went shopping for some equipment. He bought one of those life rafts that inflate immediately by pulling a little pin. We put it on the back seat of our VW alongside our little son Jerry, age six. Just as we got into some*

[Continued on page 50]



"The 1960 Plymouth is the performance king in its field . . .

it can drill through hard bends and switchbacks as adroitly as many top-rated sports cars,"

SAYS TOM McCAHILL of MECHANIX ILLUSTRATED.

One of America's best known automotive experts goes "flat out" in his praise for the Solid '60 Plymouth. Tom McCahill took a Fury 4-door hardtop equipped with the 361-cubic-inch, optional Golden Commando V-8 engine, and really put her through her paces.

According to "Uncle Tom," the Commando power plant ". . . can whizz out 0-60 mph in 8.2 seconds."

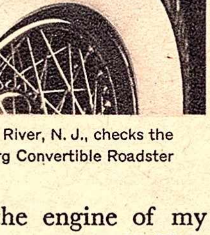
As this famous auto expert discovered, "The big payoff on a Plymouth comes when you put it on the road." But don't take his or anybody's word for it—*you* put a Plymouth on the road. Get her out on the roughest, toughest terrain you know. See if you share Tom McCahill's and our belief that the Solid Plymouth 1960 with new Dura-Quiet Unibody ". . . is the performance king in its field."

A Chrysler-engineered product, built a new solid way to give you solid satisfaction.

SOLID PLYMOUTH 1960

James G. Groendyk of Upper Saddle River, N. J., checks the mighty engine of his 1931 Duesenberg Convertible Roadster

"Quaker State protects the engine of my classic Duesenberg *and my new car too!*" This Duesenberg Model J boasted the most powerful engine of its day. Its huge 420 cu. in. straight 8 was rated at 265 h.p., and it was guaranteed to give 92 miles per hour—*in second gear*. Its condition today—better than new! Smart motorists rely on Quaker State Motor Oil. Refined only from 100% Pure Pennsylvania Grade Crude Oil, the world's finest, Quaker State assures complete, long-lasting protection.



Available most everywhere
. . . always ask for
Quaker State by name.

QUAKER STATE OIL REFINING CORP., OIL CITY, PA.
Member Pennsylvania Grade Crude Oil Association

Mail For McCahill

[Continued from page 48]

heavy traffic there was a large swoosh! *and this balloon-like boat started filling up the entire car. We were forced to jam on the brakes right in the middle of the Freeway and jump out. Jerry was almost smothered. The cops arrived soon and one of the officers slashed the boat with a penknife, allowing it to deflate. We just missed getting a ticket, to boot.*

Mrs. Henry Orr
Los Angeles, Calif.

That's pretty hard to top. The only thing I know that comes close happened to a pal of mine who owns a fireworks company. They were putting on a fancy display for a yacht club and one of his helpers phoned him at the office that he'd forgotten some of the equipment. My pal jammed a whole supply of pinwheels, aerial bombs, rockets, Roman candles, etc., in the back seat of his car and started off for the club, some 50 miles away. After a few miles he elected to toss a cigarette out the window—and didn't quite make it. Before you could count to One he was off the road and just managed to escape with his life as a private display of fireworks started on the parkway apron. All the windows and windshield were blown out and the upholstery was left non-existent. A passing patrol car equipped with a fire extinguisher is the only thing that prevented the complete ruin of his Oldsmobile. The only satisfaction he got out of this was that now he knows why they call it a Rocket 88.

● *In our science class we are holding a debate on the question of whether or not it is morally justifiable to conduct scientific experiments on living animals. Would you please give me your opinion on this subject?*

James A. Taft
Endwell, N. Y.

I happen to be strongly against vivisection—especially with dogs—as the animals are given no choice. What they do with humans is okay with me.

● *As an ardent reader of your hog-wash and as a true friend, I wish to warn you that some of your testing procedures are dangerous. You told of turning the Ford Falcon on a progressively faster and tighter circle. A friend of mine tried this once and he got going so fast and in such a tight circle that he finally drove right up his own exhaust pipe and disappeared. Hasn't been seen since.*

Carter W. Christensen
Los Angeles, Calif.

[Continued on page 52]

PONTIAC'S TEMPEST ENGINES ARE FULL-HOUSE

Pontiac for nineteen-sixty is a mighty full package for those with a highly trained sense of car appreciation.

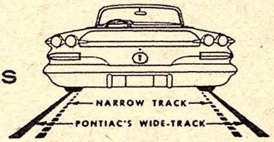
Lovers of true road machinery have been having a field day admiring the great new Tempest power plants. Ranging from the economy 215 horsepower model to the full-house 318 horsepower version, they're the most respected V-8's ever tucked under a passenger car hood. Gear boxes to match. Axle ratios to suit.

And listen. The noise boys have dampered sound down to where you'll swear they've insulated the *road*. Suspension improvements have also helped in this department . . . as well as in ride and handling.

These are the kinds of advances you expect from the team that created Wide-Track Wheel Design—greatest cure for "car-sickness" in an American passenger car. 'Nuff said? Go see! You'll learn in a quarter mile why people who know cars *best* respect Pontiac *most*.

PONTIAC MOTOR DIVISION • GENERAL MOTORS CORPORATION

PONTIAC THE ONLY CAR WITH WIDE-TRACK WHEELS



[Continued from page 50]

How do you think I lost my hair? Those pipes have sharp edges.

- *Here's one for the How-Cum Department. After seeing at Daytona that the T-birds have nearly replaced the common Fords, I couldn't help wondering how come Corvettes (in competition) can't come in for the Chevies? Surely there are enough in production to be a stock car and surely they can outperform the standard sedans. What, please, is the ruling on this?*

Eddie C. Hardman
U. S. N. S. Bermuda

The Corvette is rated as a "two-seater sports car" and the current four-passenger Thunderbird pases all the qualifications for a sedan rating.

- *As an avid hunter I'd like to know: What's the biggest thing you ever shot?*

E. T. Farmer
Louisville, Ky.

Eighteen hundred bucks at the races.

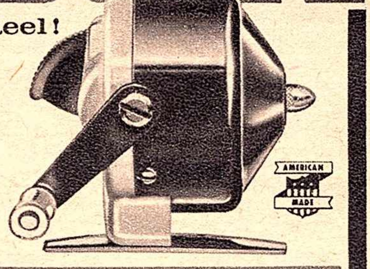
- *Is there any V8 made in America today that could be run flat-out (meaning foot flat to the floor) for a full 100 miles without causing any serious damage? Or would all of them do it? I mean a car in absolute stock showroom condition but well broken-in with three or four thousand miles on it.*

Jack L. Waterbury
Seattle, Wash.

No high-performance car made in America could run as much as 20 miles in absolutely stock condition really flat-out. Assuming that the carburetor butterflies were fully opened, nasty things would start to happen faster than I could get a haircut. One of the first things that would go would be the mufflers, which would burn off like *papier mache*. Then the engine would blow, because the stock carburetor jets that come with all American cars are too small for continued flat-out running; the mixture would be so lean that the engine would fry to a cinder.

Recently, when Fireball Roberts set the fastest stock car qualifying time on the new Daytona Beach International Speedway at 151 mph, he "breathed" his engine twice in each of the major curves for 150 or more yards. Breathing an engine means to take your foot

[Continued on page 54]



BRONSON
America's Lowest Priced Spin Casting Reel!
DART 905—America's fastest selling reel with no line twist and factory pre-set drag . . . yet it's adjustable. All metal gears. Anti-reverse crank. In black and gold. Comes with 10 lb. test monofilament line. 7 oz.
Only one of 25 Bronson quality reels. Sold everywhere. **$5.95**
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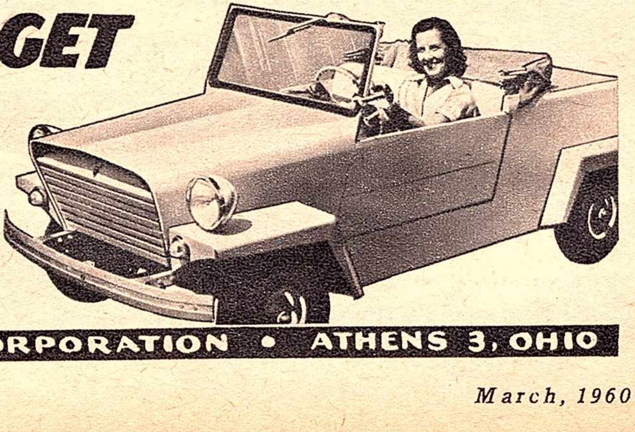
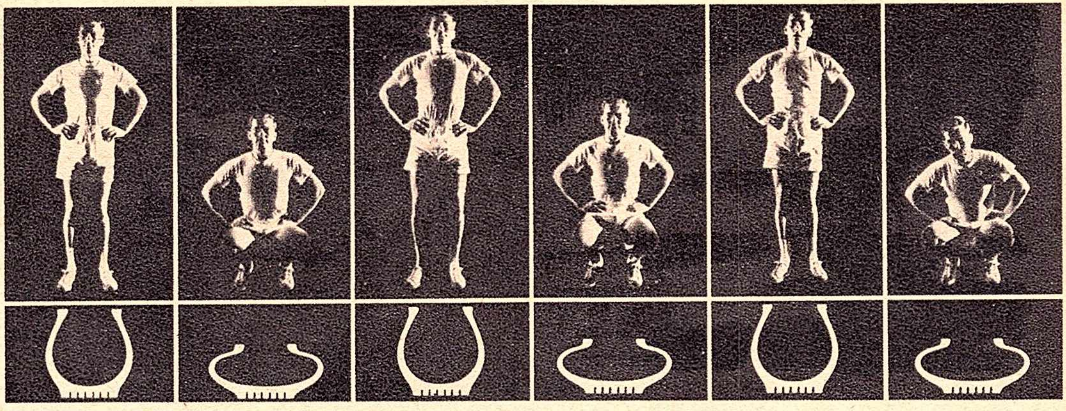


WORLD'S MOST EXCITING . . . LOWEST PRICED CAR
New KING MIDGET
15 Years continuous production—Thousands of proud, satisfied owners from Alaska to Equador. Many report 50 to 75 miles per gallon. Rear mounted air-cooled engine, smooth fully automatic transmission, four wheel hydraulic brakes. A safe and amazing small car you can own and drive at a fraction of the cost of any other. You owe it to yourself to get the surprising facts and prices. Buy it at the dealer price if no dealer near you. Rider Agents wanted. Send 25c for 32 page book, full details, dealers price, or $1 (refunded first order) for this plus Service and Repair Manual and 16 5x7 photos of car and factory.
MIDGET MOTORS CORPORATION • ATHENS 3, OHIO

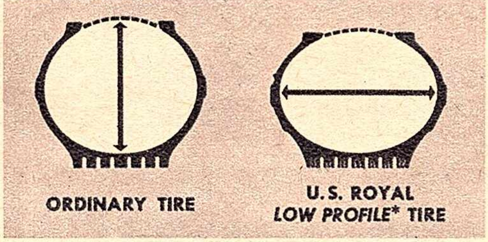
Too much flexing wears out people and tires...



The new *Low Profile* tire shape flexes less, reduces heat build-up, increases mileage!

THE TIRE THAT DOESN'T GET TIRED

SAME AIR PRESSURE . . .
BUT—LOOK AT THE DIFFERENCE



ORDINARY TIRE SHAPE flexes excessively building up intense heat that murders tires, pushes the temperature of ordinary tire above the crucial 240°F. danger zone. **"LOW PROFILE" TIRE SHAPE** keeps temperatures well below danger zone. Running hours at top highway speeds, U.S. Royal "Low Profile" tires stay cooler, keep you far safer.

PIONEERED BY U. S. RUBBER AS THE ANSWER TO GREATER TIRE SAFETY

Takes regular air pressure . . . yet it's lower and wider to keep you safe at top highway speeds

Excessive flexing heats up a tire just the way it heats up *you!* And at today's highway speeds the torturing heat build-up wears out ordinary tires fast, increases blowout risk.

New U. S. Royal "Low Profile" tires were designed specifically to overcome this hazard. Though they take the same air pressure as ordinary tires, they're lower and wider to flex less, run cooler, wear better.

No need to risk tire failure. "Low Profile" tires cost no more than ordinary tires. See the *complete* line in 5 popular price ranges for every model car at your U. S. Royal Dealer.

SAFETY
SHAPE

SAFETY 1st

U.S. ROYAL *LOW PROFILE** TIRES

United States Rubber
Rockefeller Center, New York 20, N. Y.

**"Low Profile" is U. S. Rubber Company's trademark for its lower, wider shape tire.*

Mail For McCahill

[Continued from page 52]

off the gas for a couple of seconds. This does two things: raw gas is sucked into the cylinders, which cools the tops of the pistons and head. This same shut-off also causes an extreme internal vacuum which will actually suck oil up past the piston rings to give the engine an extra heavy dose of lubrication to prevent it from seizing. If Roberts hadn't breathed his engine there was an excellent chance he'd have blown it on one lap.

Under NASCAR rules Roberts was allowed to use larger jets than normal in his carburetor and run without mufflers. Despite this, he was forced to breathe his engine. This does not, however, apply to all engines—only the high-performance jobs. Some smaller engines are safe to run flat out for many miles, as their carburetor size is so small it's like running at three-quarter throttle even when wide open. Add to this the fact that they commonly have mild anti-high-rpm cams and a restricted ignition advance (which won't permit over-revving) and you have a lot of built-in safety factors. One of the secrets of the VW's longevity is the fact that it's so detuned in design that it's almost impossible to abuse it. This is true with a number of other low-performance engines. The hot ones, though, can kill themselves with the aid of a heavy foot applied too long.

● *Have been hearing and reading a lot about "economy tests" and also read about the one you made. What I want to know is: Are all economy tests on the up and up, or not?*

Fred R. Beasley
Norfolk, Va.

I have no way of knowing whether *all* economy tests are "on the up and up" but I believe they are, with maybe just a slight twist of misrepresentation in some cases I know about. In other words, if some car claims it went from Brooklyn to Boston averaging so many miles and tenths per gallon, the chances are it did. But *how* this was achieved might be just cause for the forfeiture of their cricket bat.

For example, in one widely-publicized test a year or so ago, the car actually made the claimed mileage (the run was thoroughly

[Continued on page 56]

SAVE UP TO 1/2 ON FINE ITALIAN

CHORD ORGANS

Buy Direct-From-Importer... GET BIG DISCOUNTS

PLAY ON SIGHT! NO LESSONS NEEDED!

24 MODELS
EASY TERMS
SMALL DOWN PAYMENT
BALANCE only
PENNIES A DAY

Here's the new musical instrument sensation that's suddenly captured the entire country! You and the children can play old and new songs in just a matter of minutes! . . . thanks to the famous DA-MAR System, **included FREE!** Makes music fun right from the start. Brings the whole family closer together as everyone joins in playing everything from hit tunes to lovely hymns. Best of all . . . you actually save ½ off mfr's list prices . . . **buying direct from the importer.** Pay only a small amount down . . . the rest just pennies a day!

HAND CRAFTED IN ITALIAN TRADITION OF QUALITY

Most domestic-made Electric Chord Organs use inferior plastic reeds . . . but every Philharmonic reed is made of finest, carefully treated Swedish Stainless Steel for superbly richer tonal quality and volume. Your Philharmonic Electric Chord Organ is largely hand crafted, just as any outstanding instrument should be! A giant in performance—yet it's light in weight, fully portable. Choose from a wide selection of models, including Piano-Keyboard model for those with piano background. DOUBLE GUARANTEED. Get new FREE Color Catalog and lowest **Direct Importer-to-You Discount Prices.** Rush Coupon . .

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FREE BONUS GIFTS
- Big Solo Kit...with special easy-play arrangements of favorite songs.
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5 DAY FREE HOME TRIAL

Try it—play it—enjoy it in your own home on 5-FULL DAYS' FREE TRIAL. Only then can you appreciate how much fun the Philharmonic can bring into your home. Details free.

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NOW! THE FACTS YOU'VE BEEN WAITING FOR!

- ✯ About the new 1960 economy cars
- ✯ About the 1960 standard-size cars
- ✯ About the 1960 medium-priced cars

1960 X·RAY
Checks the ECONOMY CARS on the basis of usefulness to the user
Checks today's STANDARD-SIZED CARS on the basis of usefulness to the user
Checks the fine cars in the MEDIUM-PRICED FIELD on the basis of usefulness to the user
Economy Car Safety

NEW FREE AUTOMOTIVE X-RAYS

Compare All Popular 1960 Cars

Here, for the first time, are the straight authentic facts you want to know about all the 1960 cars—presented in easy-to-read, easy-to-understand fashion.

What about room? Which cars actually offer six-passenger room?

How do the 1960 cars stack up in engines and mechanical features?

How do economy claims stand up when compared with official records?

Which car is really low-priced in each category? Which has official highest resale value?

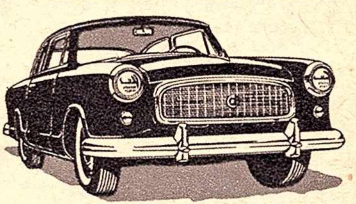
You'll get the honest, straight answers to these and hundreds of other questions in the new, just-off-the-press 1960 Automotive X-Rays.

Three complete books—one for each of the popular-price car fields.

Don't buy any 1960 car until you see these invaluable new comparisons. Every page is loaded with facts and interesting, revealing side-by-side photographs. Just a few minutes spent reading this information can save you hundreds of dollars when you buy your new car. Hurry! See your Rambler dealer now!

AMERICA'S LOWEST PRICE

$1795



Suggested delivered price of the 1960 Rambler American 2-Door Deluxe Sedan at the factory, Kenosha, Wisconsin, including federal taxes. State and local taxes, if any, optional equipment, extra.

GET YOUR FREE 1960 AUTOMOTIVE X-RAY AT YOUR RAMBLER DEALER'S TODAY!

GRAVELY
makes tough jobs
EASY!
EASY PAY PLAN
30 tools

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Rotary Mower attachment mows-mulches the finest lawns or roughest weeds *faster, easier, better!*

Just one of 30 year-round, job-proved tools. Gravely, with *more* power . . . *more* performance . . . *more* tools, does the jobs others can't!

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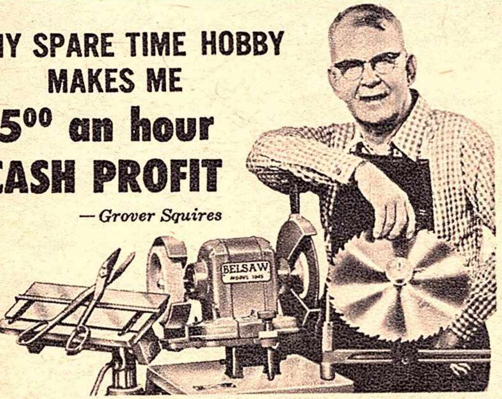
MY SPARE TIME HOBBY MAKES ME $5^{00} an hour CASH PROFIT

— *Grover Squires*



START YOUR OWN SPARE TIME BUSINESS
You can turn your spare time into Big Cash Profits with your own **COMPLETE SHARPENING SHOP** . . . Grind saws, knives, scissors, skates, lawn mower blades . . . all cutting edges. Your Own Cash Business with no inventory . . . right at home . . . no experience needed.

FREE BOOK tells how you can start your own spare time business while you are still working at your regular job. Low Cost — time payments only $15.00 a month. **Send coupon today.**

FREE BOOK

BELSAW SHARP-ALL CO, 7180 Field Bldg., Kansas City 11, Mo.
Send Free Book "LIFETIME SECURITY". No obligation.
Name
Address
City State

Mail For McCahill

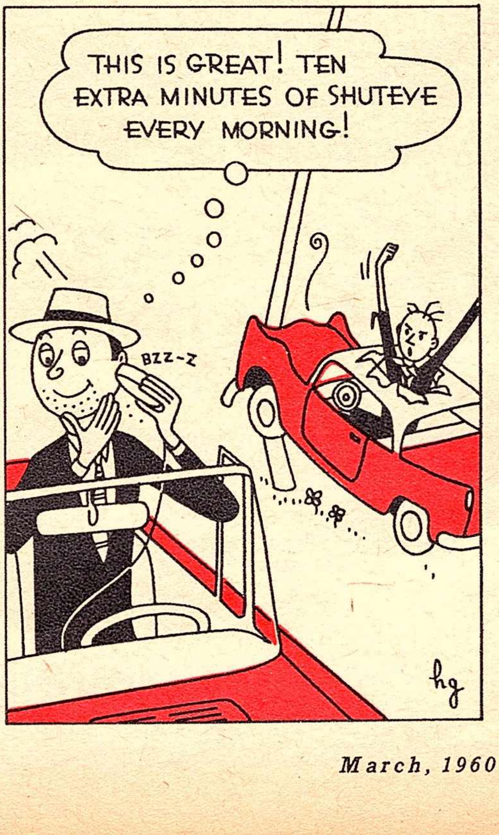
[*Continued from page* 54]

supervised by a recognized sanctioning body) but left out of the ads was the fact that nearly all the driving was done at night when the traffic was at its lowest—and the average speed was actually a hair less than 30 mph for a trip of almost 3,000 miles! This type of economy publicity, though technically accurate, is reminiscent of the sharpie who says to the rube, "I'll bet you ten bucks I can jump higher than the Empire State Building." As soon as the money is down, the sharpie jumps six or seven inches off the ground and then says to his victim, "Okay, now let's see how high the Empire State Building can jump!" Legally, the sharpie won the bet honestly but morally he's a cad, sir. Economy runs only begin to mean something when all the facts are published, such as average speed, time of day and driving conditions.

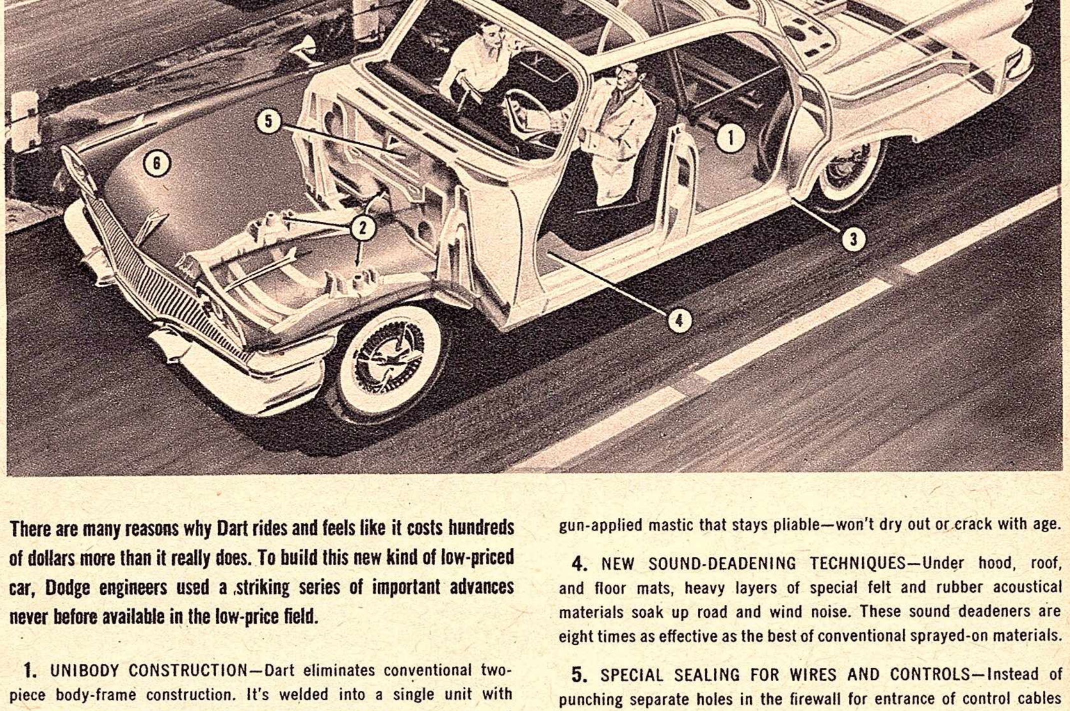
- *What's the best way for me and my wife to drive across the country this summer?*
  K. O'Brien
  Brooklyn, N. Y.

You might try an automobile.
—*Tom McCahill*

DON'T DO-ITS


THIS IS GREAT! TEN EXTRA MINUTES OF SHUTEYE EVERY MORNING!
BZZ-Z
hg

Dodge Dart Is Sound-tight, Weather-tight, Built To Stay Tight!



There are many reasons why Dart rides and feels like it costs hundreds of dollars more than it really does. To build this new kind of low-priced car, Dodge engineers used a striking series of important advances never before available in the low-price field.

1. UNIBODY CONSTRUCTION—Dart eliminates conventional two-piece body-frame construction. It's welded into a single unit with stressed-strength. One-piece construction eliminates body squeaks and rattles. It's far stronger to begin with—and it stays that way.

2. FREE-FLIGHT POWER—New three-point suspension cradles engine in space—actually floats it on supple steel coils and rubber blocks. Sound and vibration are completely isolated from passengers.

3. SPECIAL WEATHER SEALING—All body seams and joints are shiplapped to prevent leakage. Seams are further sealed with a special gun-applied mastic that stays pliable—won't dry out or crack with age.

4. NEW SOUND-DEADENING TECHNIQUES—Under hood, roof, and floor mats, heavy layers of special felt and rubber acoustical materials soak up road and wind noise. These sound deadeners are eight times as effective as the best of conventional sprayed-on materials.

5. SPECIAL SEALING FOR WIRES AND CONTROLS—Instead of punching separate holes in the firewall for entrance of control cables and wires, Dodge engineers routed major units through an ingenious self-sealing keyhole. There, special die-cut rubber blocks simultaneously position the wires and seal out drafts and noise.

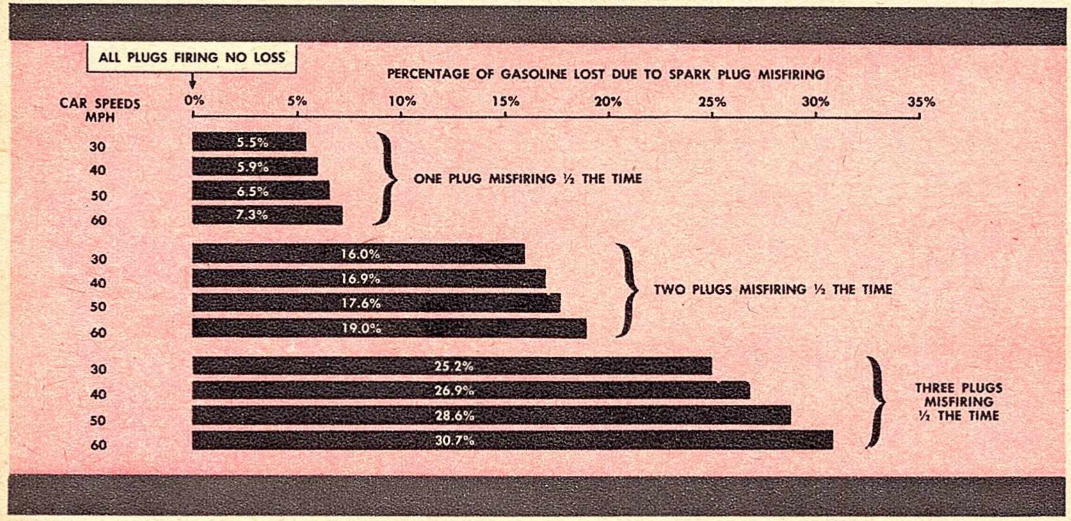
6. COMPLETE RUSTPROOFING INSIDE AND OUT—Every Dart Unibody is deep-dipped seven times in tenacious rust preventives. This deep-dipping completely seals every crack and seam, inside and out. Final finish is then added—two coats of special primer, two coats of lustrous, long-lasting Lustre-Bond baked enamel.

AMERICA'S FIRST FINE ECONOMY CAR **DODGE DART**

NOW DODGE BUILDS TWO GREAT CARS: DODGE DART • '60 DODGE

Look how much you lose when Spark Plugs misfire!

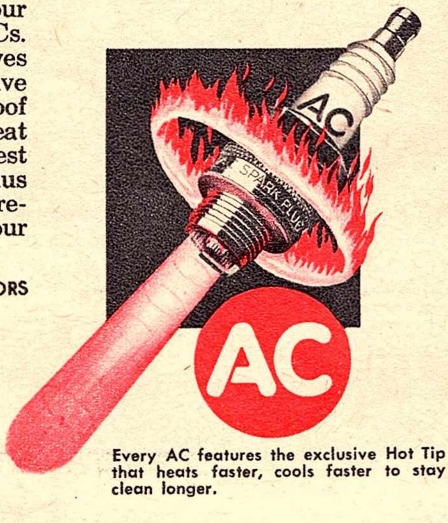
All spark plugs tend to misfire intermittently as they wear, and modern high horsepower engines make it difficult to tell when such misfiring occurs. But as the chart below shows, spark plugs that fire only part of the time waste gas by the gallon. For example, if your car gets 16 miles per gallon at 60 miles per hour, one misfiring spark plug can drop your mileage 7.3% to 14.8 – two can drop it 19% to 13 – three can drop it to 30.7% to less than 12. You lose mileage at all speeds, and the higher the speed, the greater the loss.



To get the best mileage from your car, replace your spark plugs at least every 10,000 miles with new ACs. AC Fire-Ring Spark Plugs will pay for themselves through the improved mileage you'll get. ACs have such mileage-producing features as exclusive leakproof conducting seal center electrode bond for uniform heat range, and superior Buttress Top insulator for greatest resistance to electrical flashover leakage. These plus many other advancements have kept AC in the forefront of spark plug development for 52 years. See your dealer, ask for ACs — and save.

AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

AC PRESENTS THE ART CARNEY SHOW, NBC-TV, April 8

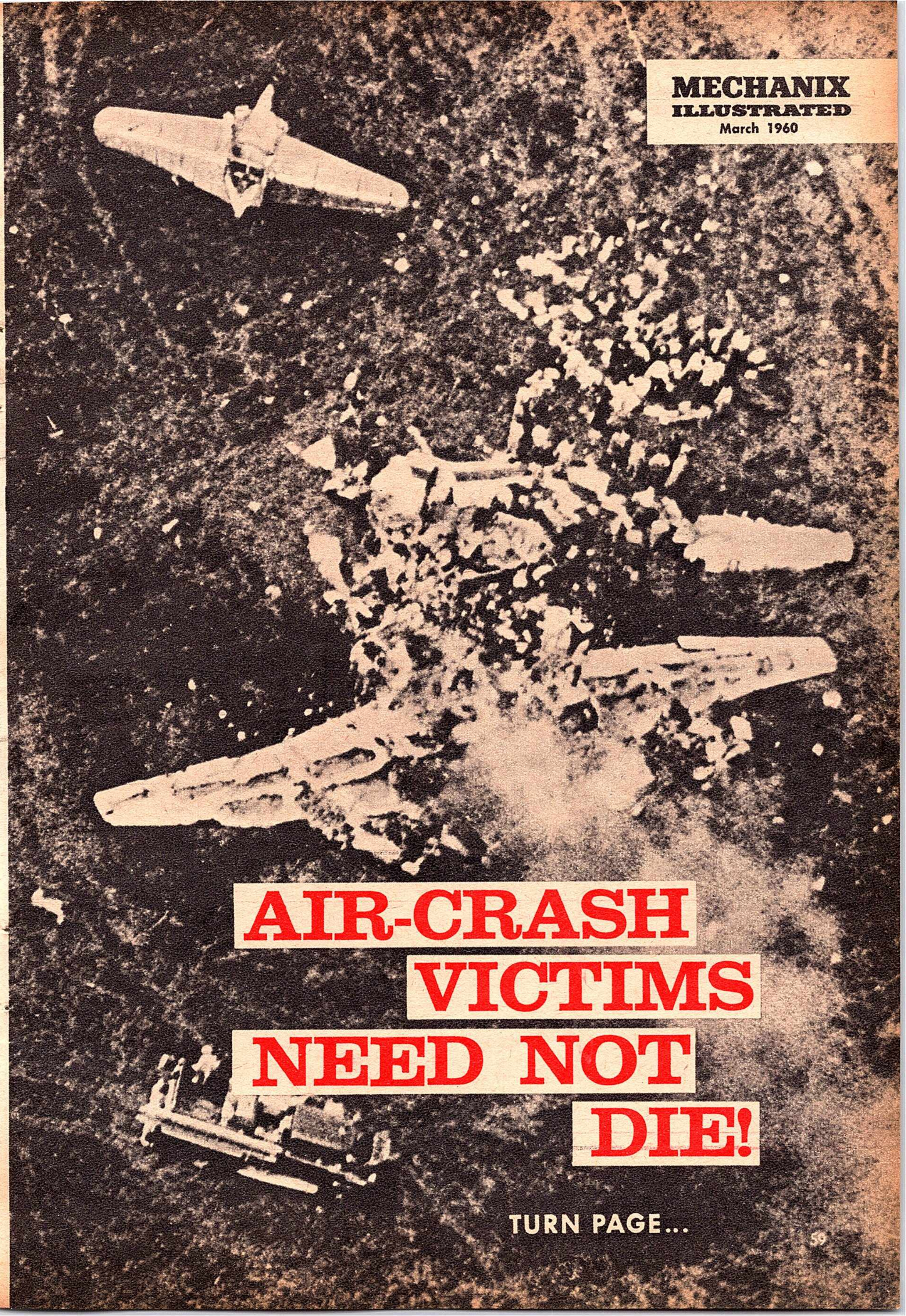


Every AC features the exclusive Hot Tip that heats faster, cools faster to stay clean longer.

They must be the best!

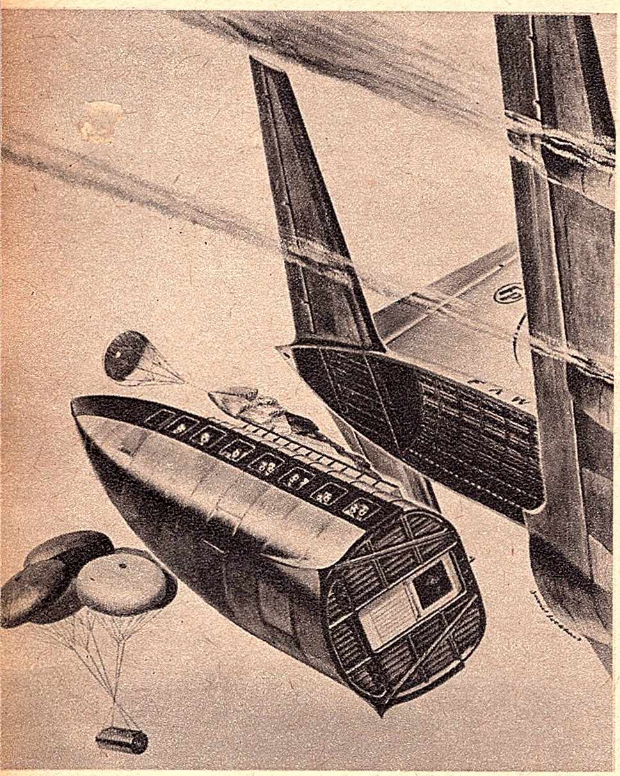
AC Fire-Ring Spark Plugs

MECHANIX
ILLUSTRATED
March 1960



AIR-CRASH VICTIMS NEED NOT DIE!

TURN PAGE...



EJECTION of pod is triggered by crew member inside it. Bulkhead and door are airtight.

ESCAPE PODS CAN PREVENT NEEDLESS AIR-CRASH DEATHS!

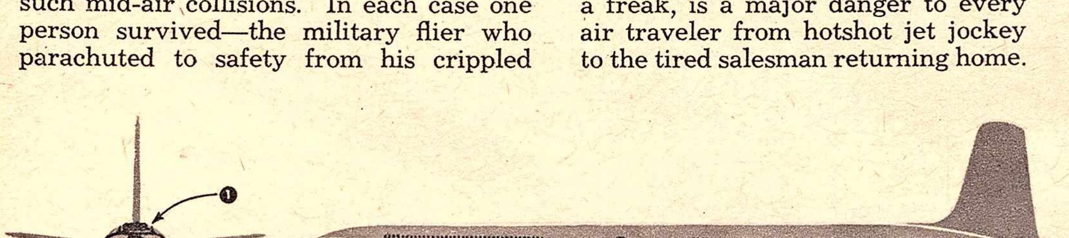
By Robert G. Beason

DECEMBER 22, 1959: Twenty-five passengers and six crew members on a Brazilian airliner are killed after their plane is rammed by an Air Force trainer over Rio de Janeiro. There is just one survivor—the military pilot.

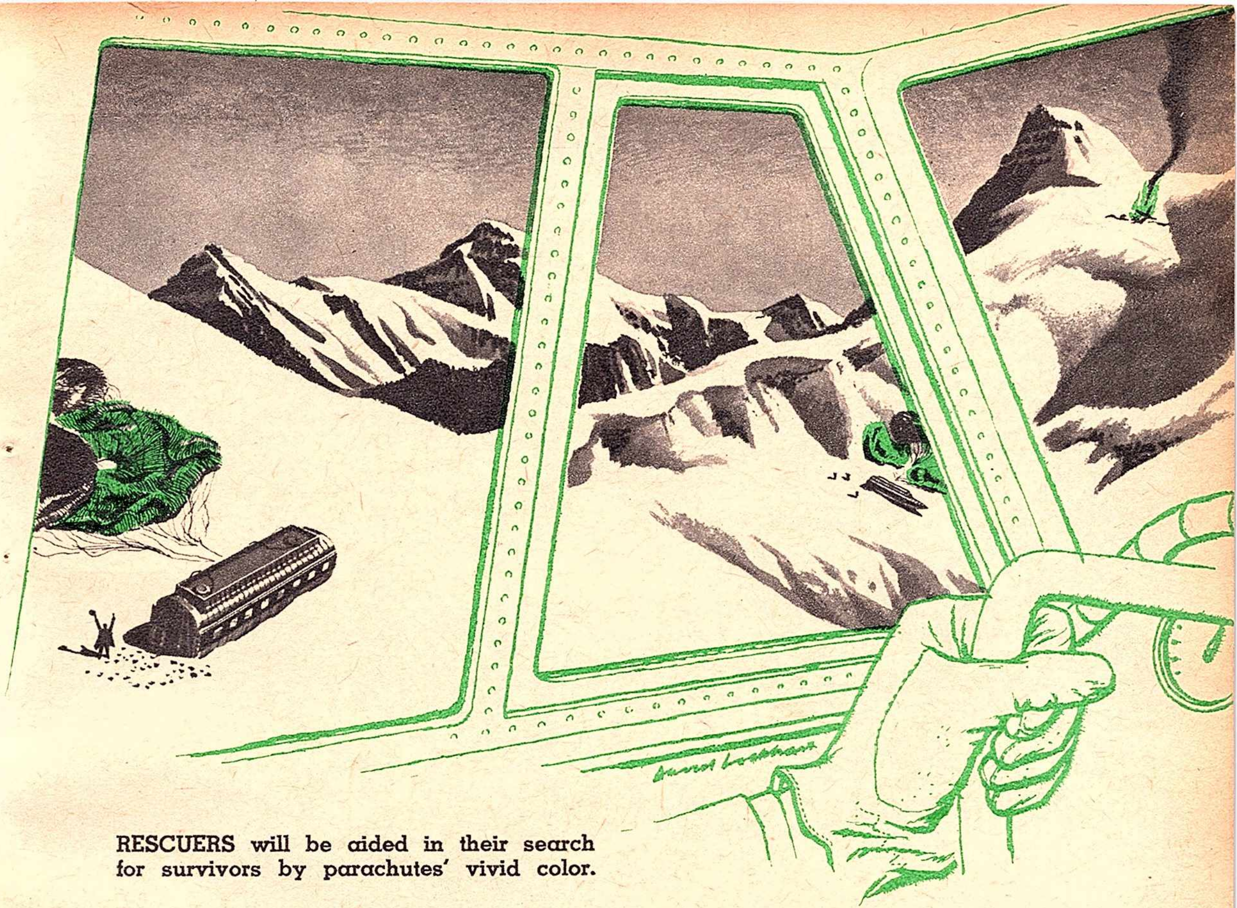
The story of the tragedy was familiar. Three times in as many years commercial planes carried all aboard to death after such mid-air collisions. In each case one person survived—the military flier who parachuted to safety from his crippled plane after the crash occurred.

A box score for the four crashes shows: Airliners—77 killed. Military planes—4 saved.

In 1959 we recorded the worst airline safety record in history, with more accidents and more fatalities than ever before. Today the special horror of mid-air collision, no longer a freak, is a major danger to every air traveler from hotshot jet jockey to the tired salesman returning home.



1. PARACHUTE RACK atop pod. 2. Belly compartment holds freight, ballast weights, pneumatic shock absorbers. 3. Forward pod. 4. Galley, washroom, luggage. 5. After pod.

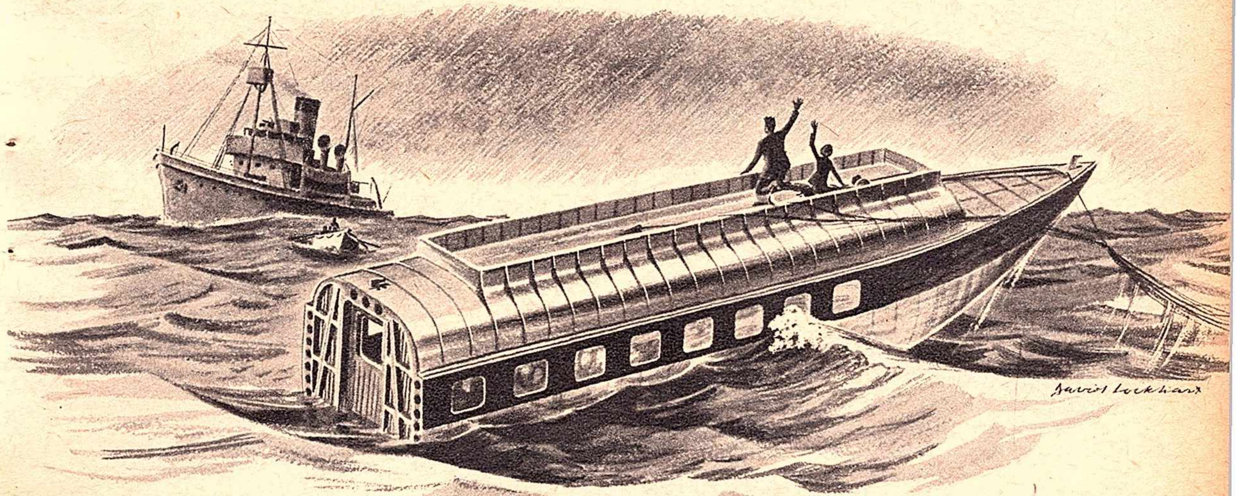


RESCUERS will be aided in their search for survivors by parachutes' vivid color.

Mid-air accidents are one of the few types which should offer some chance of escape. But the odds after a collision favor the military flier. He has a parachute. Airline passengers and crewmen do not.

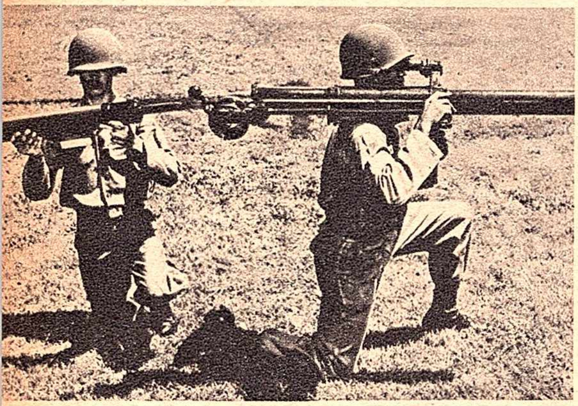
Why can't airline passengers have a second chance, too?

Aboard ocean liners we find lifeboats. On military planes the use of parachutes is nearly universal. Yet aboard commercial [*Continued on page* 166]

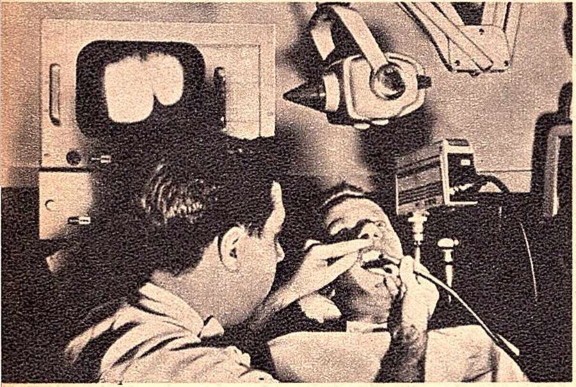


AT SEA the pod makes an enclosed lifeboat. One of the chutes will serve as a sea anchor.

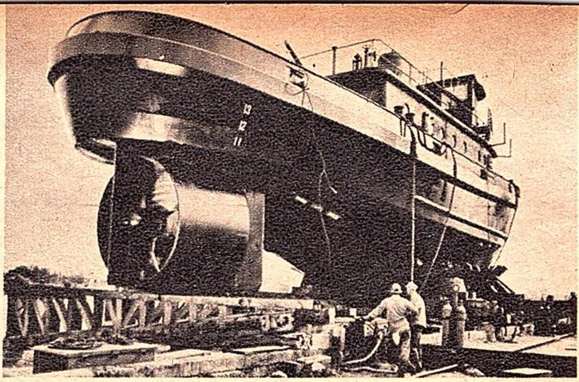
NOW SEE THIS!



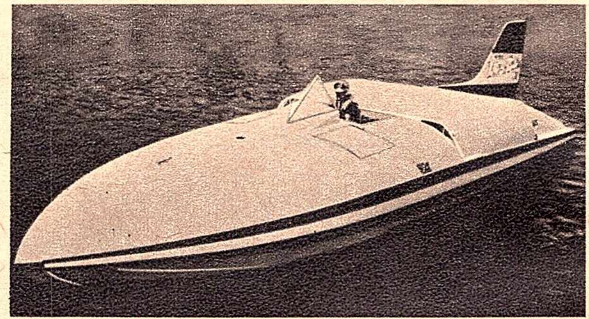
90MM RIFLE, recoilless, gives infantryman the close-range punch of medium-size tank gun. Designed to be carried into battle and employed by a team of two men, the 35-pound, four-foot weapon can be carried and fired, in emergency, by one man. It fires a shell which can penetrate the heaviest known armor. Its effective range is 500 yards—twice that of 3.5 bazooka. The rifle is fired from shoulder, as shown.



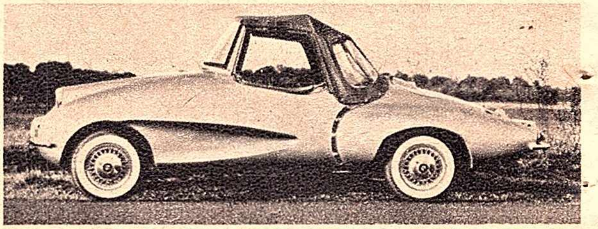
DENTAL TV developed by Avco Corp. under Naval sponsorship uses camera probe to pick up image that appears, many times enlarged, on screen. Probe is cable containing up to 10,000 hair-like, light-transmitting fibers with fingertip-size lens on probe end and coupled to camera on other end. The device may be adapted later for medical probes inside the body. Besides giving medics a convenient view of hard-to-see areas for consultations, this closed circuit TV will be very useful for medical lectures. Light-conducting fibers can also carry light safely into the body cavities for viewing.



NEW TUGBOAT built by Dravo Corp., Wilmington, Dela., has Kort nozzle—a tunnel enclosing its propeller to give extra push. After rudder steers forward, twin rudders before nozzle steer in reverse. Dalzell Towing, New York, has chartered the boat.



NEW HYDROPLANE designed and built by Marine Research, Inc., Bay City, Mich., rides high in water although she weighs over 11,000 pounds. Her owner, Precision Scientific Company, Chicago, Ill., will use her as a high-speed lab in which to test marine materials. Props and rudders of new design will also be put to the test.



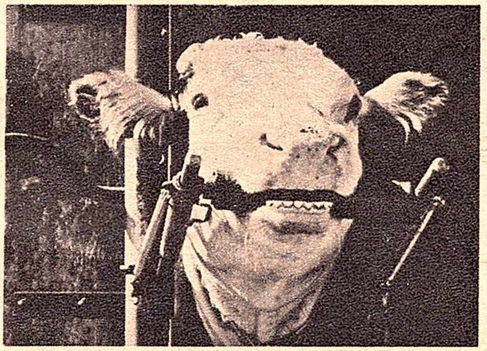
SUPER JET V2N, designed and built in France by l'Union Industrielle, is billed by its backers as "the cheapest and most practical sports car in the world." The price is expected to be about $1,400 here. It tops out at 70 mph, gets 64 mpg in long-haul driving. Glass fiber body took crash at 35 mph into concrete wall without a dent. Air-cooled, single-cylinder mill is at rear.

MONEY MAKING IDEA

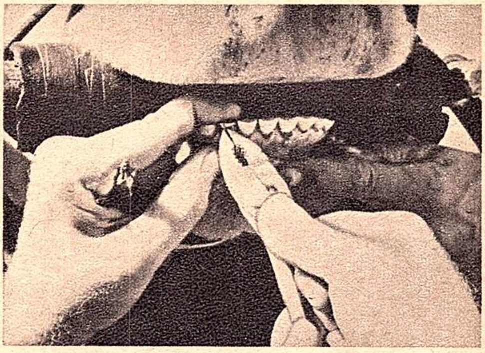
STEEL CROWNS FOR COWS' TEETH

CROWNS of stainless steel are now being used to save cows from being made into hamburger. The eight vital lower front teeth necessary for eating and drinking usually erode by abrasion in five years and it's "Goodbye, Bossie." Now Bovine Crowns, Inc., Sedgwick, Colo., preserves these teeth with crowns that fit over them. Total cost: $15 to $20. Time required to crown one cow by an experienced veterinarian is about ten minutes.

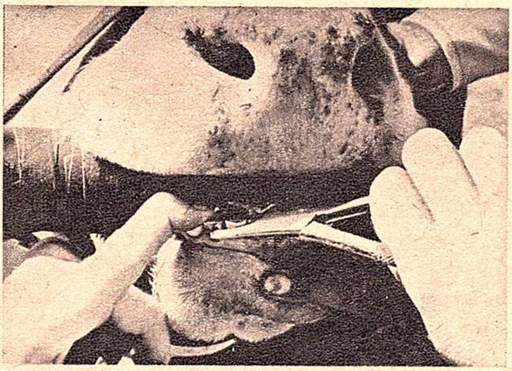
Dr. Ward C. Newcomb, dentist of Chappell, Neb., is the man who devised the stainless steel crowns for cows. There are now ten sizes in crowns and they must fit snugly over each tooth. They'll add years to cud-chewers everywhere, meaning better breeding stock for cattlemen.—*Pearl P. Puckett*

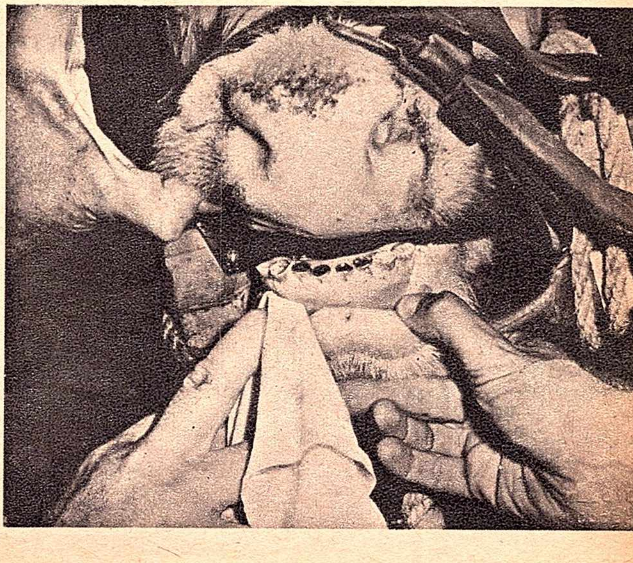


BOSSIE'S lower front teeth, vital to her eating and drinking, are ready for crowns.

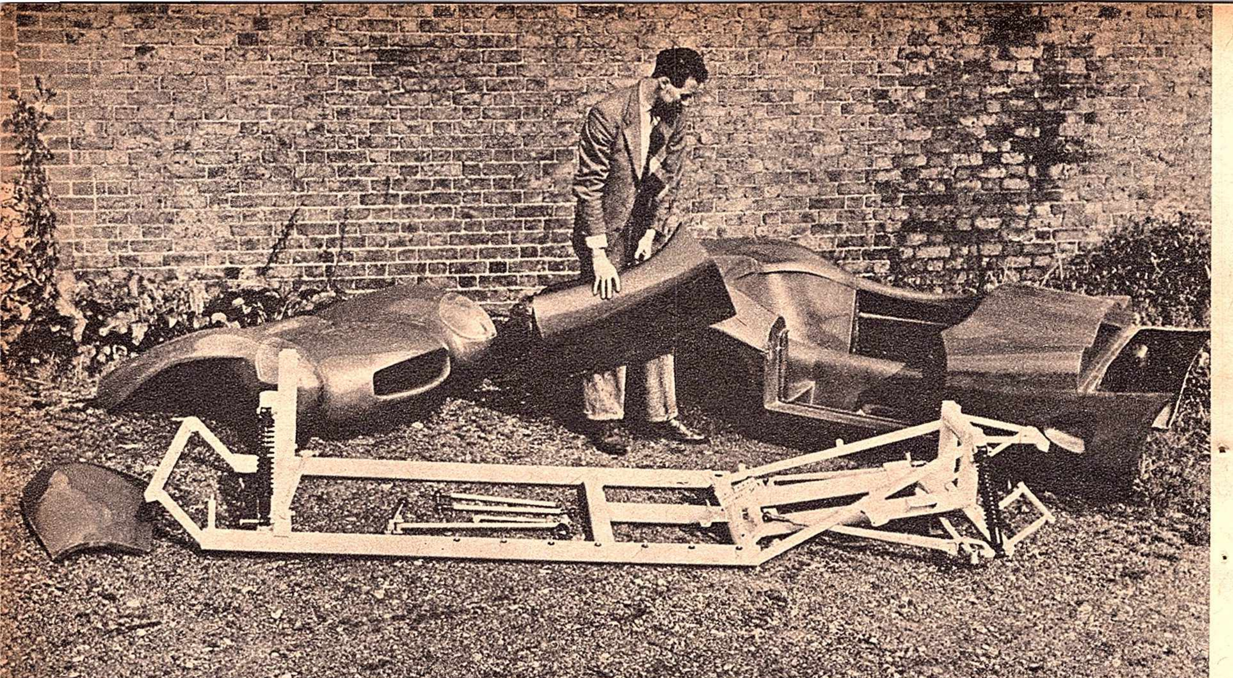


CROWN has cement in it, fits over individual teeth, is then crimped with pliers.





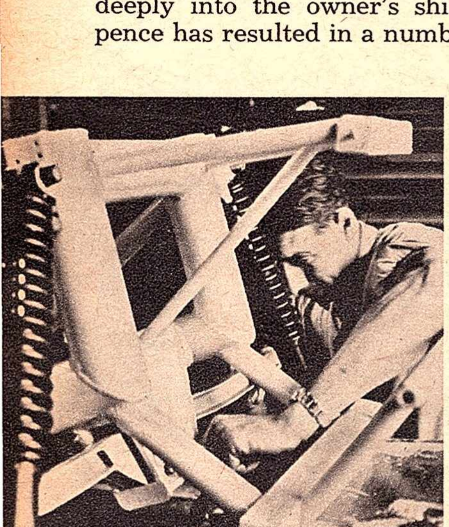
SECOND crimp folds in excess material along front of each tooth. Above, third crimp forces cement around each tooth. Crowns won't erode or tarnish. New set of falsies is shown, right.



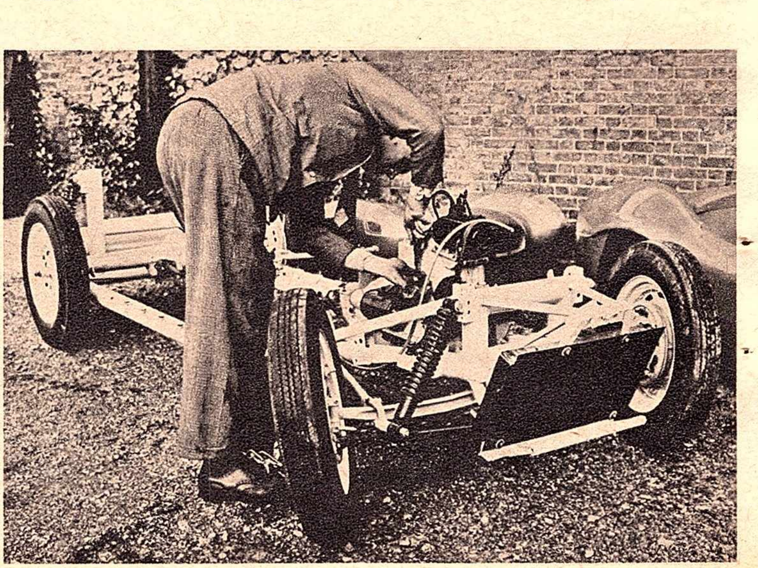
CAR KIT body and chassis as they come out of the package. Chassis costs $206, body $364.

BUILD-YOUR-OWN CAR

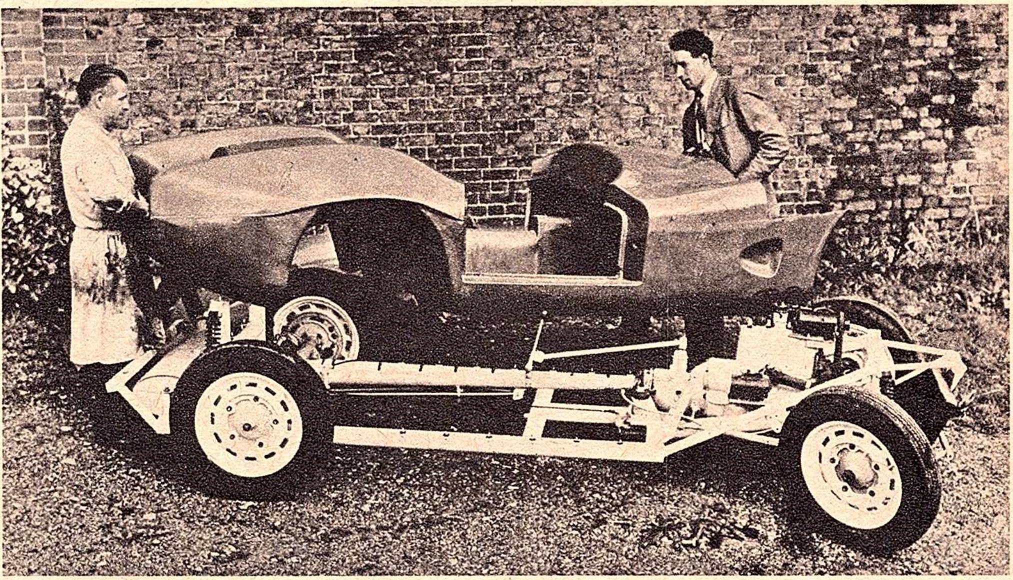
OVER in Blighty the growing demand for a sporting rig that won't cut too deeply into the owner's shillings and pence has resulted in a number of you-build-it car kits. A very classy example is the Typhoon. Designed and built by a very new corporation, Tornado Cars, Ltd., the Typhoon is a chassis-and-body



FRONT SUSPENSION units are independent. Independent owner puts them in Typhoon himself.

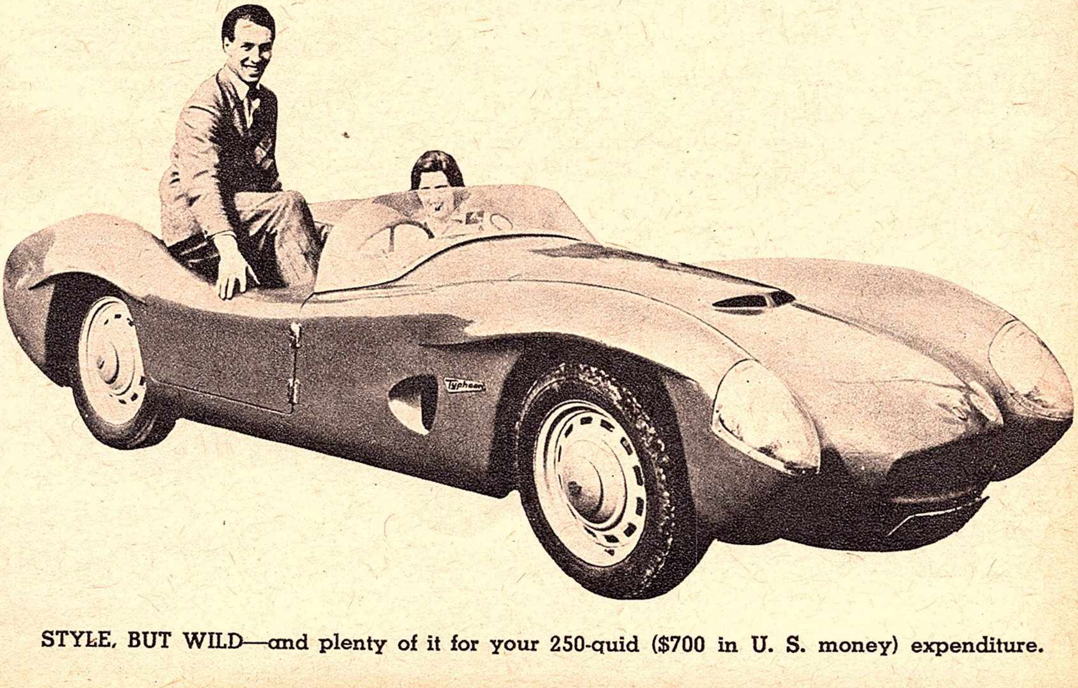


DYNAMO gets a finishing touch. Kit comes with all necessary brackets for Ford radiator, engine, gear box, steering column, steering box and gasoline tank.



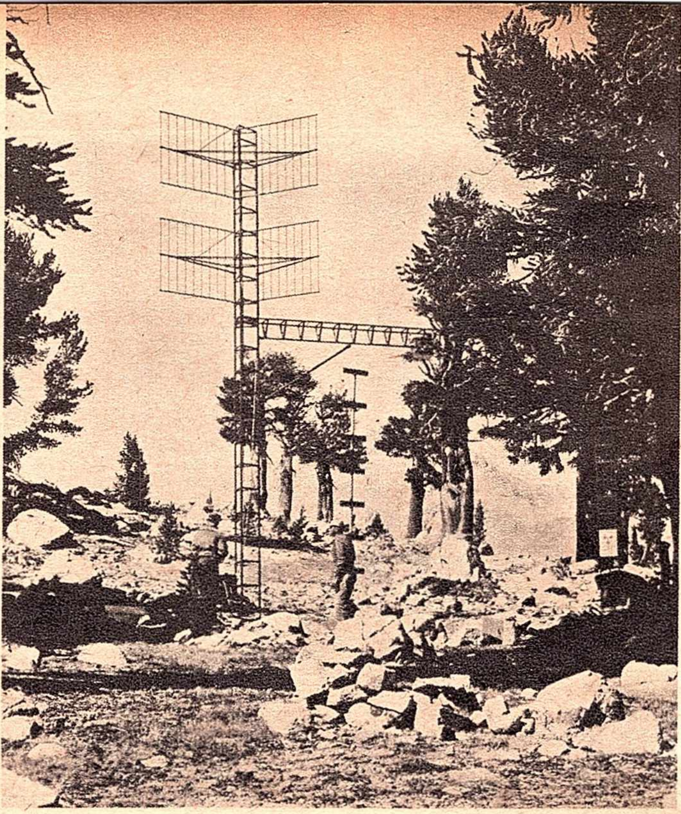
A HAND WITH THE BODY is the only help kit builder will need with the job, says maker.

kit job that goes with standard English Ford parts. The Ford parts should cost about $85, the kit $570 and you will need some extras such as tools and Band-Aids. The body is laminated glass fiber and is styled just right for men who like Limey looks with somewhat swashbuckling overtones—a bit of the old Allard or D Jaguar. Without overstatement, the maker claims the Typhoon has been pitted against a late-model sports car and more than held its own. •



STYLE, BUT WILD—and plenty of it for your 250-quid ($700 in U. S. money) expenditure.

ELECTRONIC SNOW GAUGE



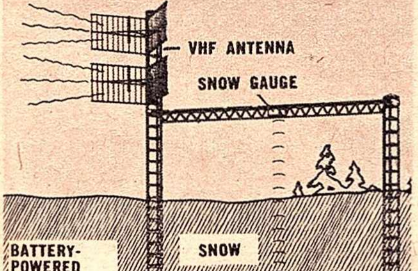
TOWERS must be at least 20 ft. tall to clear snow that may almost reach crossbeam. Gauges are unattended nine months of year.

ELECTRONIC snow gauges in the High Sierras of California and the Bitterroot Mountain Range of Idaho now measure the water content of snow fields for hydrologists.

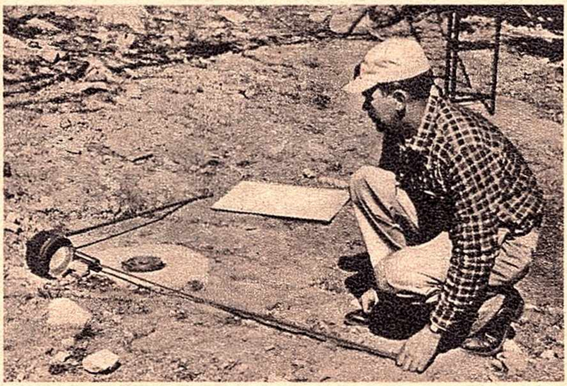
The system consists of a 20-ft. H-frame tower at each of the three snow gauge sites, and two relay towers, all in remote areas. In addition, there is a terminal tower at the Isabella, Calif. base station. Each gauge site has a radiation detector, VHF transmitter, receiver, battery and control unit.

A small radioactive cobalt 60 capsule imbedded in the ground beneath each H-frame tower emits radiation through the snow to a detector anchored on the tower which beams to the base station the water content of the snow field.

The U. S. Army Corps of Engineers and the Sirra Electronic Corp. of Menlo Park, Calif., developed electronic snow gauges which will eventually be converted to report weather conditions. •

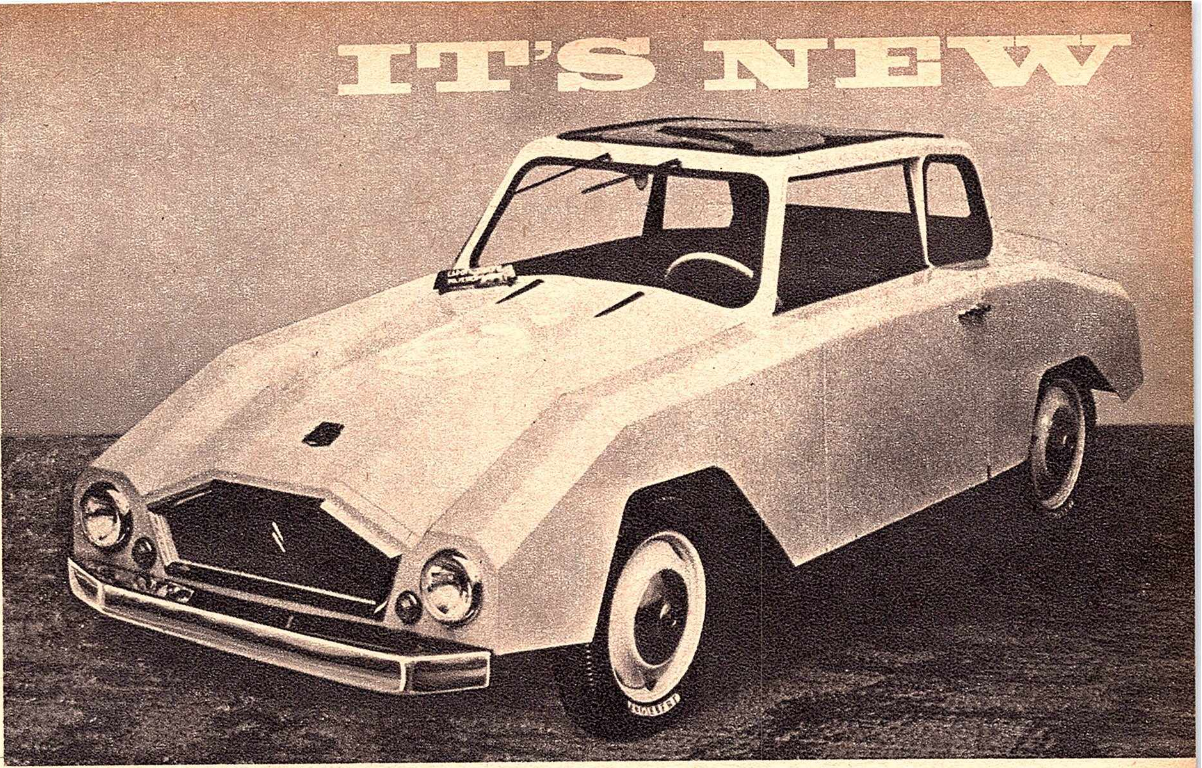


SNOW GAUGE diagram shows equipment used to relay density of snow to base station.

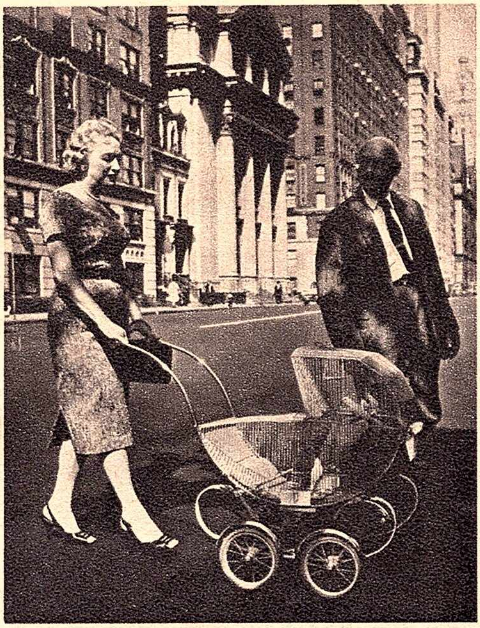


CANNISTER with radioactive cobalt 60 goes into concrete receptacle at ground level.

IT'S NEW

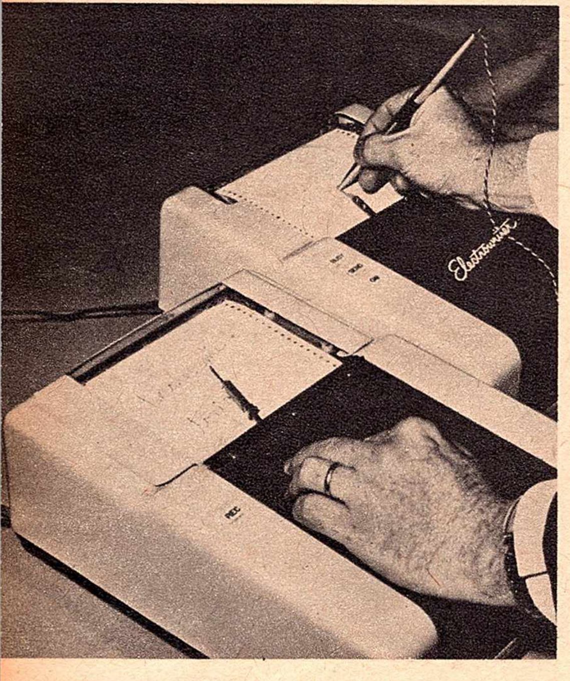


RED PLASTIC ROOF sheds a lurid glow in the cabin of this unusually styled automobile, which was shown recently in Paris. Car is a young designer's variation on the 2CV Citroen.

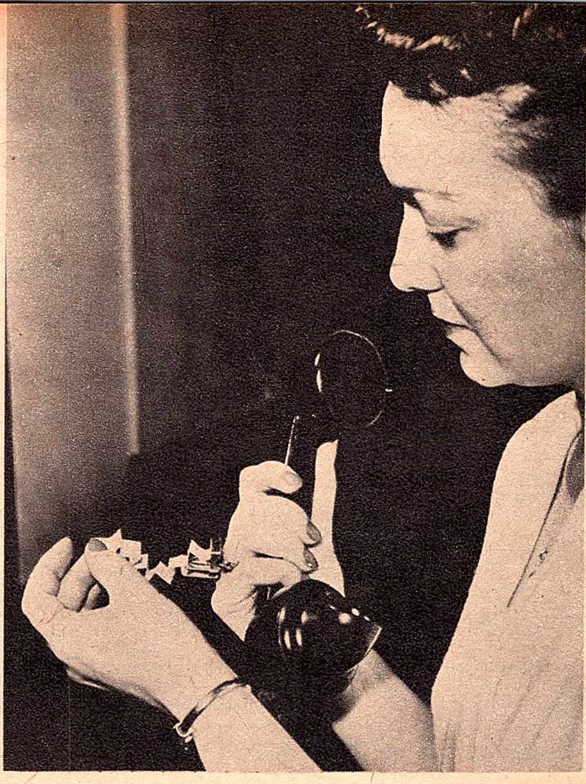


BIRDIES GO BYE-BYE with Ruth Berger, kindly and inventive New York budgie fancier who designed carriage so she could air her pets. Dutch firm manufactures it.

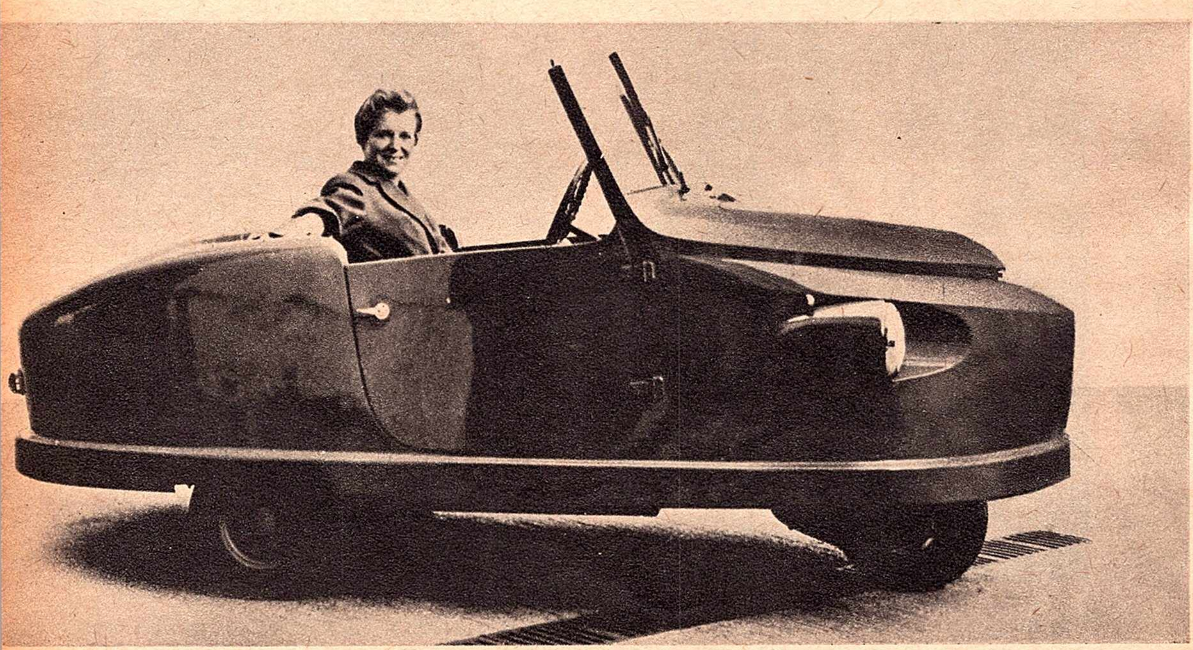
WRIST RADIO KIT, British, can be put together in two hours. Reception is called "surprisingly good"—depending on what is expected. Battery-powered, transistorized.



ELECTROWRITER transmits handwritten messages in the handwriting of the sender. For inter-office or cross-country use. The sending and receiving units are shown here.

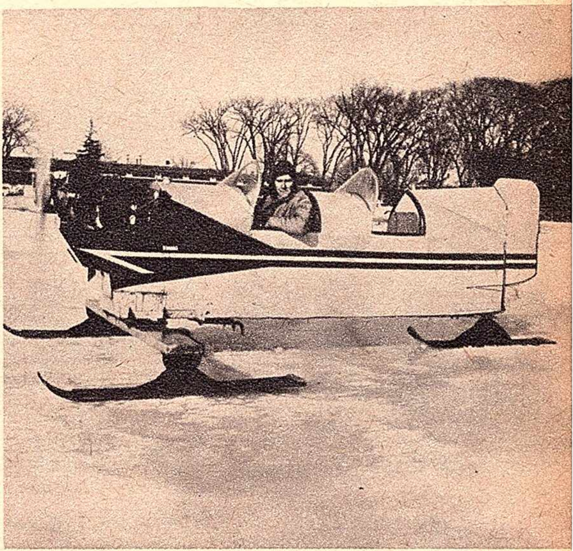


RING-ME-UP LIST snaps out of ring on fair Briton's finger. An adaptation of an old idea, the ring can be used, like old-time poisoner's, to carry emergency pills.

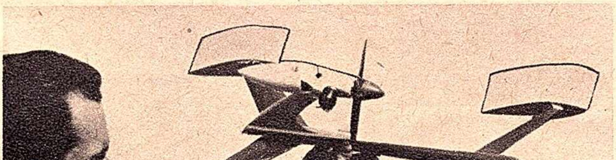


THREE-WHEELER French midget car, the OTI 125, is a two-seater, plastic-bodied, weighing 350 lbs.—which makes it heavy to carry upstairs. It tops out at 40 mph, claims 60 mpg.

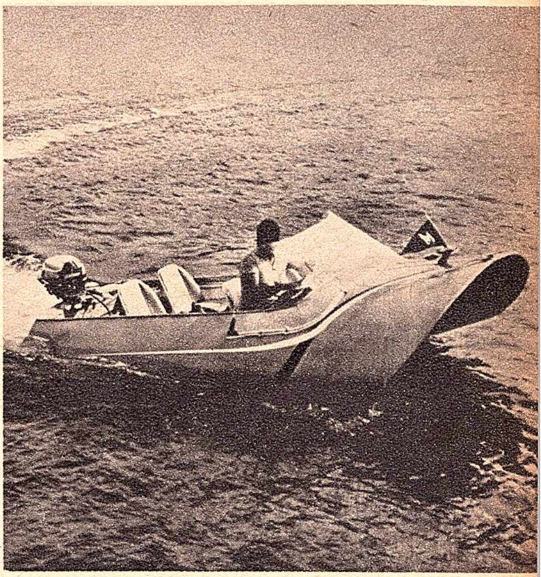
BRIDGE CURTAIN being tried out in a New York club hides partners from each other so they can't see unintentional signals—nor intentional ones. For tournament play.



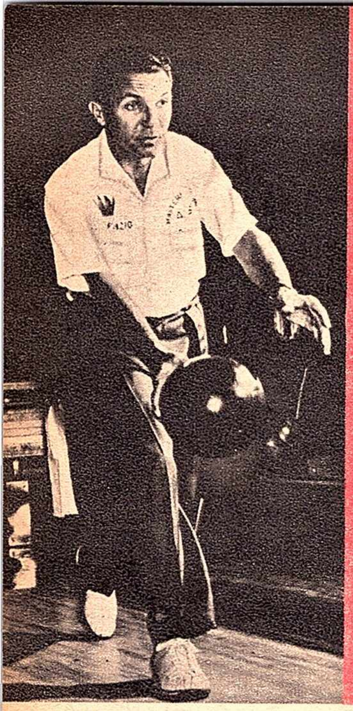
LOOK—NO WINGS. Plane-style iceboat belonging to Gailen Fox, Fontana, Wis., is powered by reject 65-hp Continental mill. It does 100 mph, takes skis for snow-going.



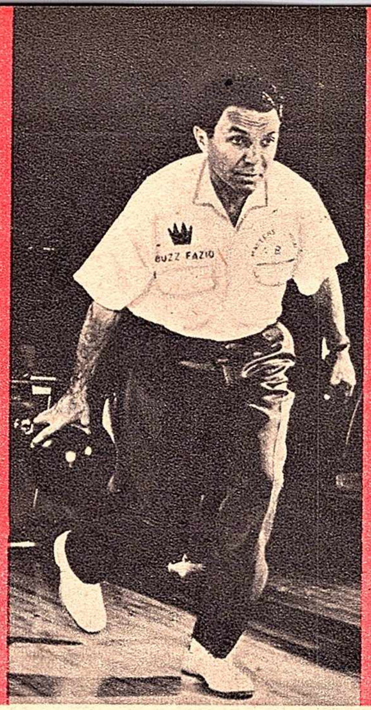
LOOK—NO BOAT. Achim Wohlfeil of Offenbach, Germany, shows off model powercraft that won him European model speed title in 2.5 cc class at red-hot 41.22 mph.



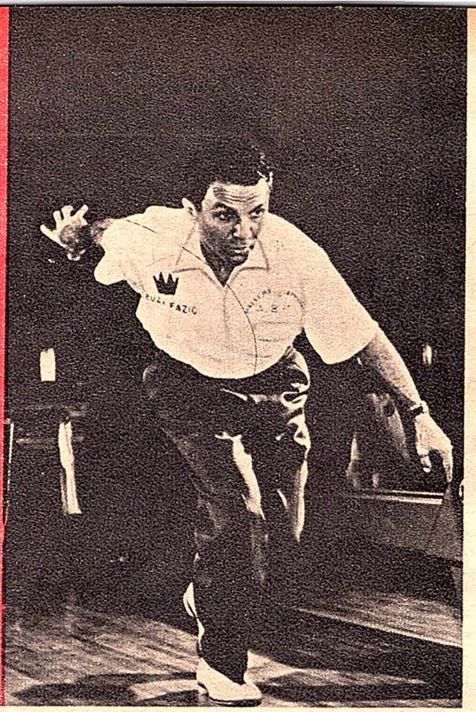
POWERED CATAMARAN, built entirely of aluminum by Mitchell Boat Co., Elkhart, Ind., proved exceptionally smooth-riding. Experimental, not for production.



FOUR-STEP delivery begins with right foot.



SECOND left-foot step is longer, ball begins rearward swing.



BALL reaches top of backswing on third step with right foot.

A Champion Tells You . . .

HOW TO IMPROVE YOUR BOWLING

By BUZZ FAZIO

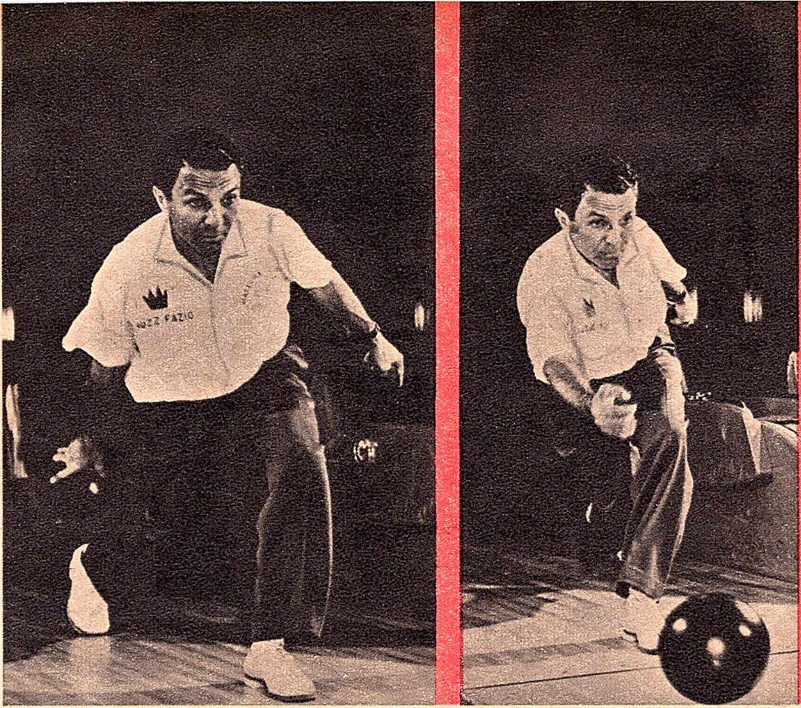
As told to James Winchester

EVERYBODY can't be a big-league bowling champion. A slim one-tenth of one per cent of the nation's 20,000,000 bowlers boast a 200 average or better. Less than five per cent average better than 180 and another five per cent have less than a 125 average. It's in the 150 to 160 range that most bowlers find themselves and it's not a bad range, for you can hold your own in most leagues in this scoring belt.

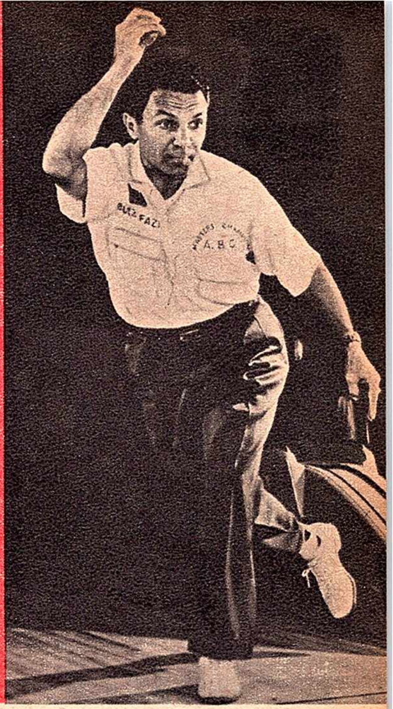
If you're going to be a good bowler you should invest in a comfortable pair of shoes. You should practice often. It's better to bowl one game every day than to roll ten games at a clip. Get off on the right foot by hiring an instructor. Don't try to teach yourself. Many bowling emporiums even provide free instructions for would-be keglers.

You should own your own ball, one that is

BUZZ FAZIO was captain of the '59 National Team Champions in the American Bowling Congress competition. A top member of Brunswick-Balke-Collender's bowling advisory staff, he's been twice co-winner of the ABC National Doubles title, ABC Masters Champion and five times a member of the Bowler's Journal All-American team. Buzz thrives on competition and is noted for his clutch bowling. He was born in 1908, started bowling in 1931, lives in East Detroit, Mich.



FOURTH step with left foot is longest one in delivery. It brings you to foul line in a graceful slide. Ball is away.



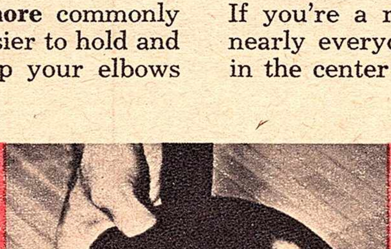
FOLLOW through with arm when ball is on the way.

fitted to your grip. If you're a novice, choose a three-finger ball. Two-finger balls require a stronger grip. Finger holes should be big enough to let your fingers and thumb slide out easily but not so large that you can wiggle your fingers in them.

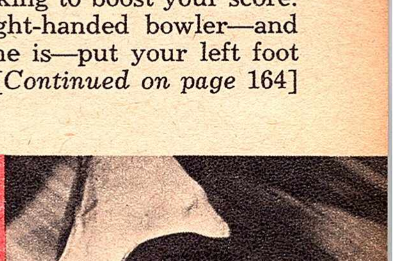
A 14-pound or the more commonly used 16-pound ball is easier to hold and feels lighter if you keep your elbows in at your sides and hold the ball at chest-level, rather than having the forearms straight out and parallel to the floor.

Where to stand and how far behind the foul line to start your steps are important in working to boost your score. If you're a right-handed bowler—and nearly everyone is—put your left foot in the center [*Continued on page* 164]

HOOK. Ball breaks to the left before it hits pins.



STRAIGHT ball. Deliver with thumb on top, fingers under ball.

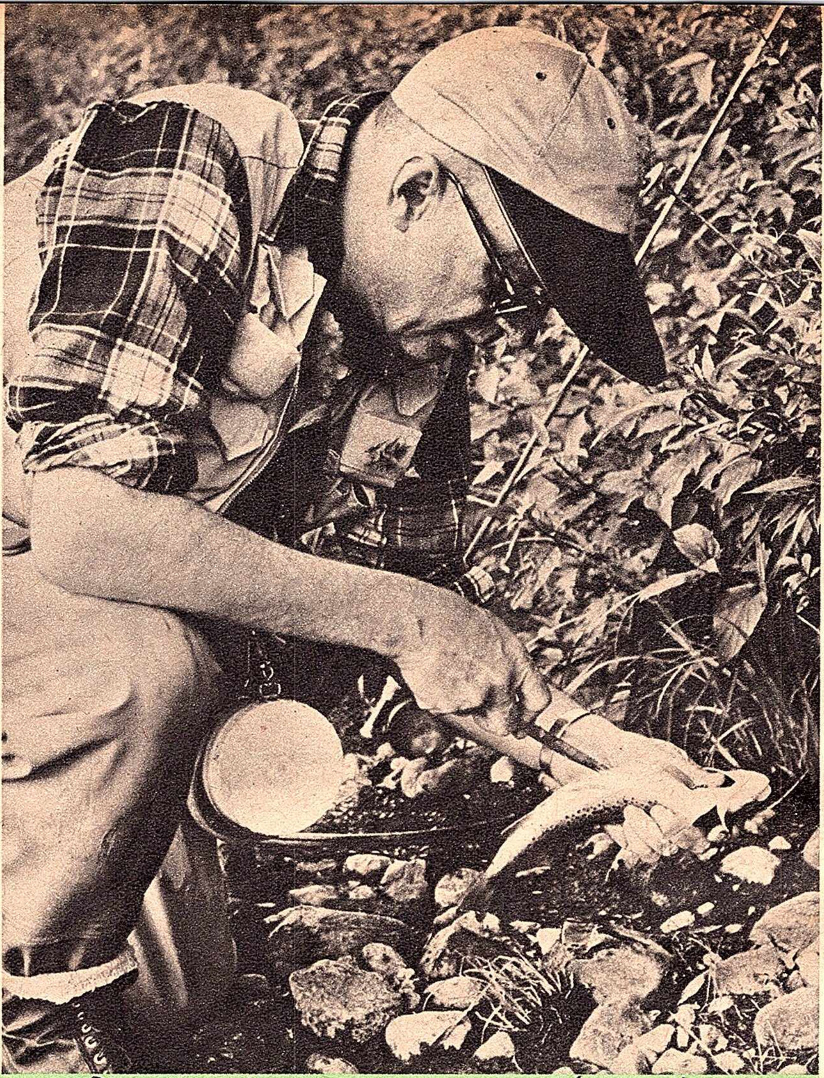


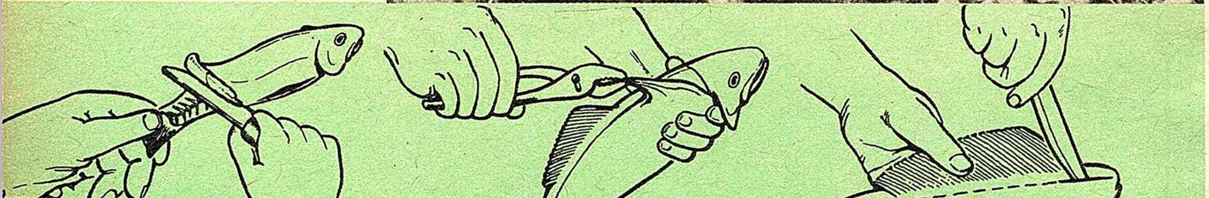
CURVE. Thumb should be in a nine o'clock position.

Hunting and Fishing

Tips on Cleaning and Cooking Fish

By
Wynn
Davis



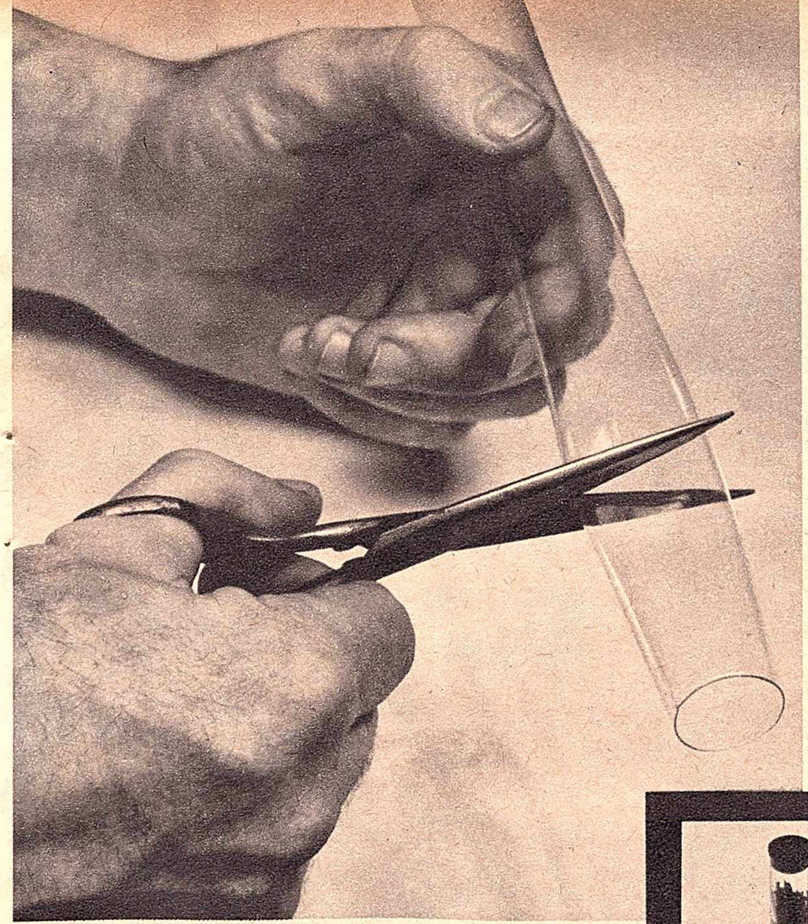


KNOW-HOW of (A) boning, (B) skinning, (C) filleting—all explained in text.

THE best-tasting fish are those you catch yourself—providing you know how to clean and cook them. All fish, but especially trout and salmon, should be cleaned as soon as caught. Fish have powerful digestive juices in their innards that begin to seep through the flesh as soon as the fish dies. This gives the flesh a strong "fishy" taste and softens the flesh—one reason why market fish never taste really good to the [*Continued on page* 159]

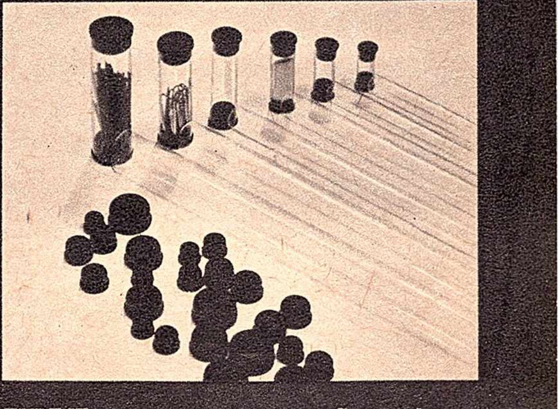
BRIGHT IDEA AWARD
MECHANIX ILLUSTRATED

Tube-It

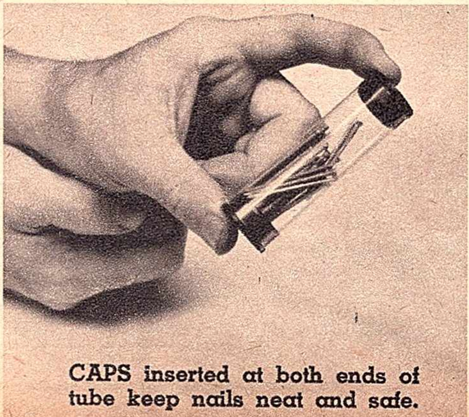


SNIP of the scissors cuts Tube-It to desired length.

TUBE-IT consists of six 18¾-inch long plastic tubes with diameters of ⅜, ½, $\frac{9}{16}$, ⅝, ¾ and ⅞ inches. Included are 36 caps, six of each size. This enables the do-it-yourselfer to make practically any size container, with a snip of his scissors, to store drills, nuts, bolts, screws, nails, etc. Tube-It retails for $1.59. Hoover Products, Inc., Huntington 3, West Va. •



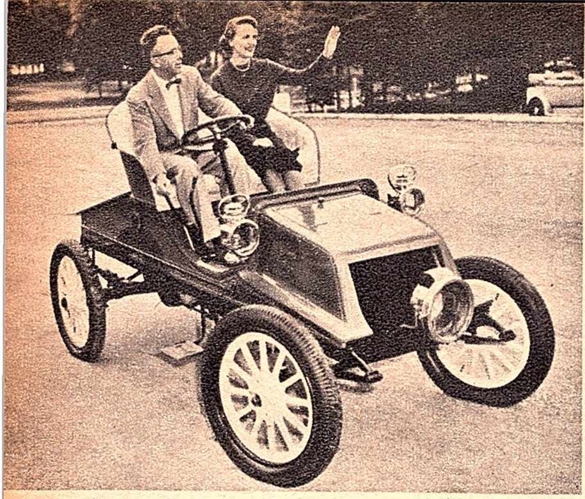
TUBE-IT comes in six sizes. Snipped containers store nuts, bolts, screws, nails, etc.



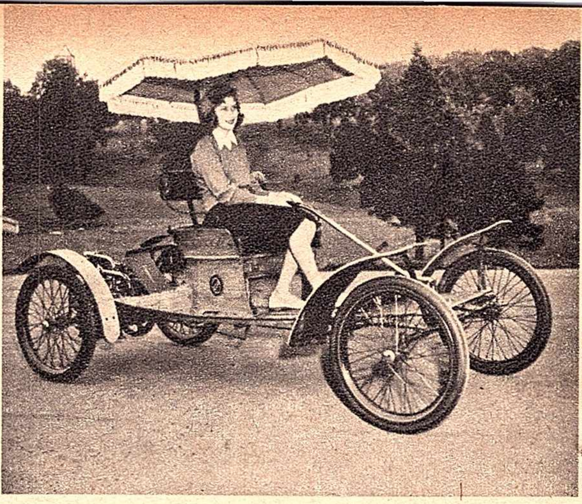
CAPS inserted at both ends of tube keep nails neat and safe.

WIN $50

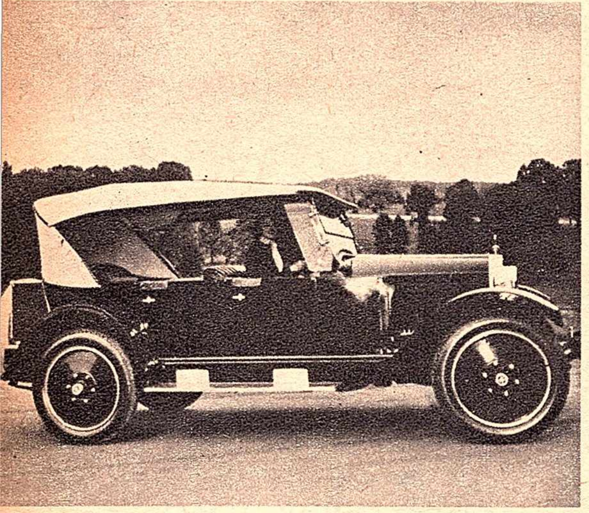
MI will award $50 each month to the first person who tells us of a new and useful gadget that is patented and in production. Manufacturers are also eligible for this award. Pictures and a description should be sent to Bright Ideas Editor, Mechanix Illustrated, 67 West 44th Street, New York 36, N. Y.



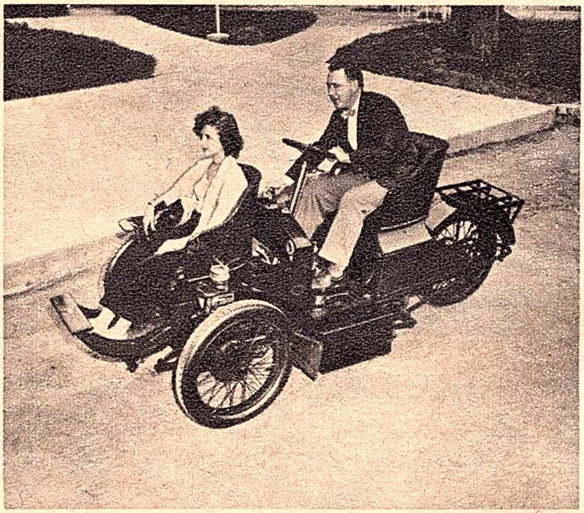
1. One of first cars to have a steering wheel and new single-tube pneumatic tires.



2. This 350-lb. rig was first car owned by the famous race driver Ralph De Palma.



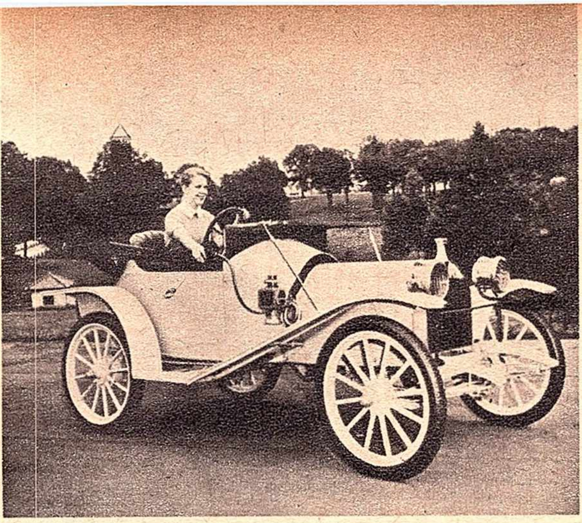
3. A predecessor of Jeep, this big car was one of the sportiest on early pikes.



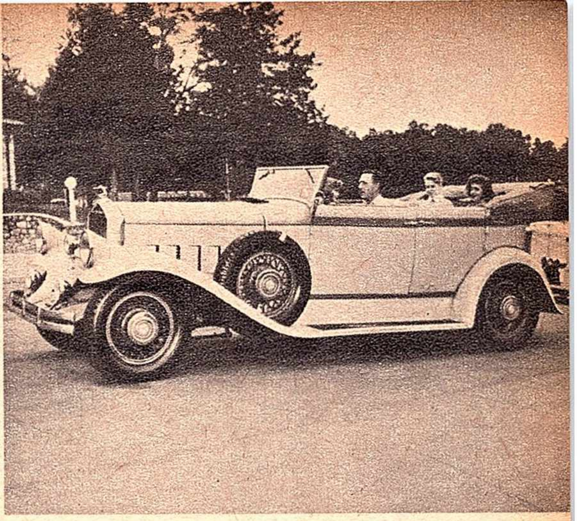
4. Three wheels and chain drive powered this early motorized jitney. Remember, Dad?

CARAVAN of OLD-TIMERS

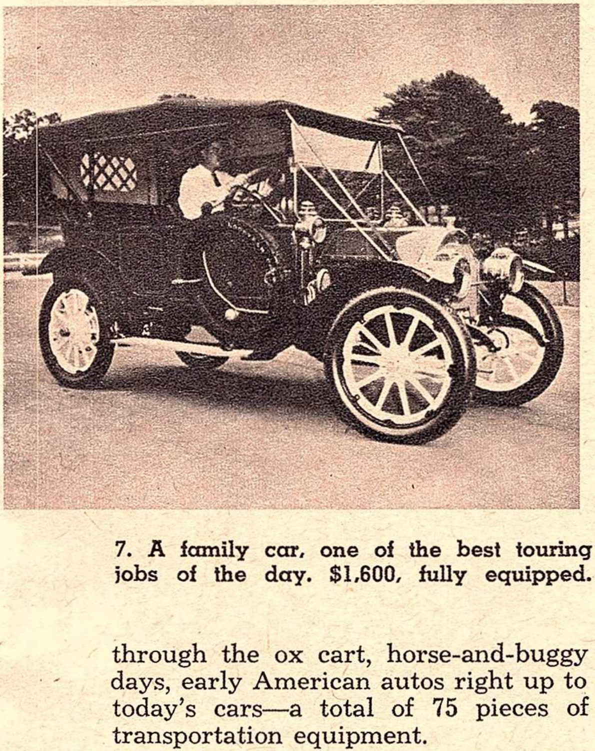
THE famous and beautiful Caverns of Luray in Virginia—nine miles from the Central Entrance to Skyline Drive and the Shenandoah National Park—boast a big attraction for auto-minded tourists. It is the Car and Carriage Caravan featuring a history of transportation beginning with man on foot



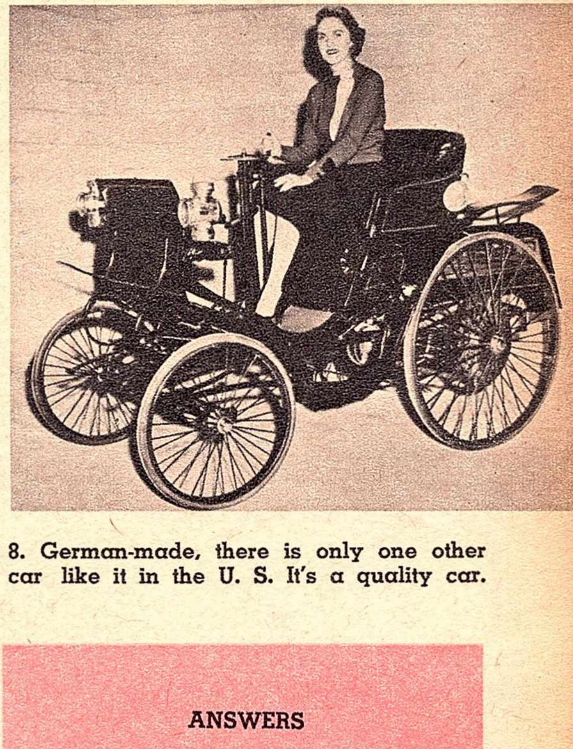
5. Sporty antique equivalent of MG was advertised as little car, was hot seller.



6. This car was one of the last of a long line of early fine cars built in the U. S.



7. A family car, one of the best touring jobs of the day. $1,600, fully equipped.



8. German-made, there is only one other car like it in the U. S. It's a quality car.

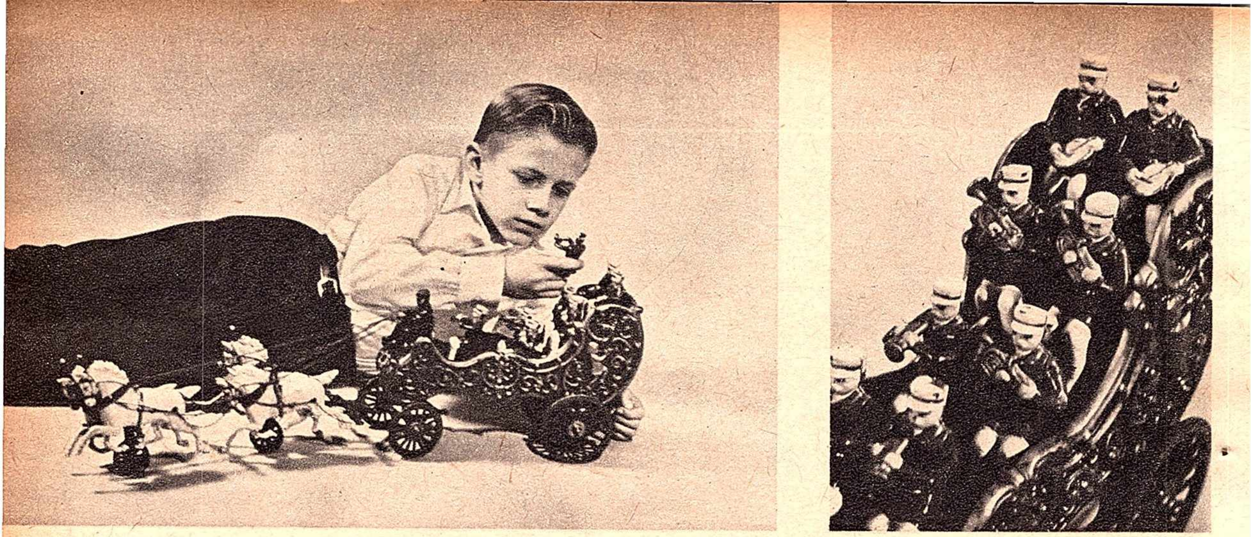
through the ox cart, horse-and-buggy days, early American autos right up to today's cars—a total of 75 pieces of transportation equipment.

Tourists can see a 1755 Conestoga wagon and such old-time favorites as the 1902 curved-dash Oldsmobile and the tradition-shattering 1930 Cord.

You'll notice that we didn't identify the name and year of the cars in the photos above. We thought you'd like to try and guess them. The answers are on the right. Just turn the magazine upside down when you're ready to check your answers. •

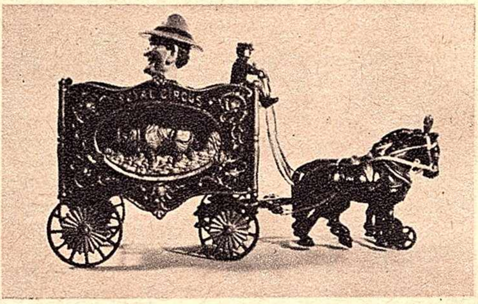
ANSWERS

1. 1903 Winton.
2. 1903 Orient Buckboard.
3. 1922 Willys-Knight.
4. 1905 Riley Tricar.
5. 1911 Hupmobile.
6. 1931 Pierce-Arrow.
7. 1912 Hudson.
8. 1892 Benz.

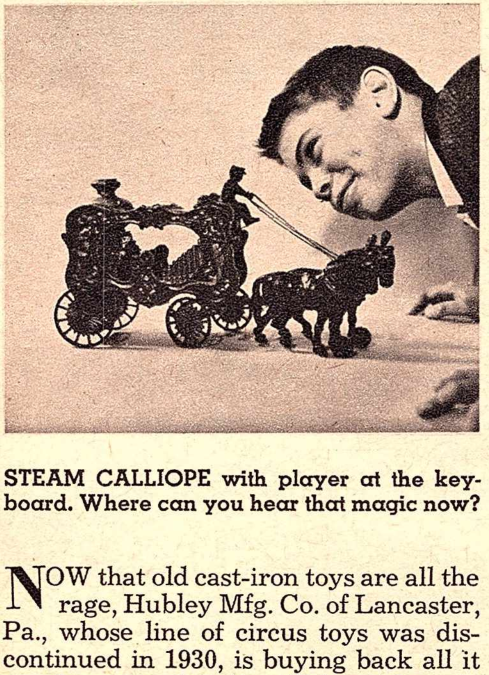


BAND WAGON—something that has long since become a mere figure of speech for political reporters can still be observed in durable iron. Band members are removable.

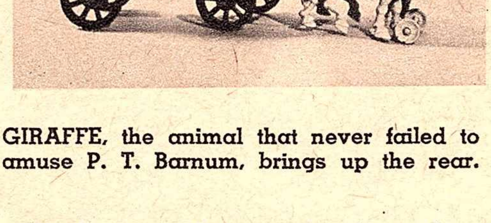
TOYS OF YESTERYEAR



FARMER BROWN bobs up and turns head as wagon rumbles behind iron Percherons.



STEAM CALLIOPE with player at the keyboard. Where can you hear that magic now?



GIRAFFE, the animal that never failed to amuse P. T. Barnum, brings up the rear.

NOW that old cast-iron toys are all the rage, Hubley Mfg. Co. of Lancaster, Pa., whose line of circus toys was discontinued in 1930, is buying back all it can from people who still have them in attic, barn or basement, where they have been retired after charming generations of circus-loving children. But if you happen to have a set we doubt that your kids will let you sell them. •

Look What They're Doing With BATTERIES!

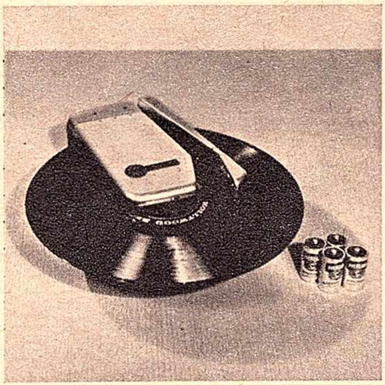
By Lawrence Sanders

IT wasn't too many years ago that the average American home-owner considered himself the cat's pajamas if he could boast of a battery in his Marmon, two more in his Atwater-Kent radio, a couple of leaky cells in the house flashlight and maybe two No. 6 dry cells working his front door buzzer.

Today, his gadget-happy son wakes to music from a battery-powered clock radio. He shaves with a battery-powered razor, burnishes his teeth with a battery-powered toothbrush, cuts his claws with a battery-powered nail trimmer.

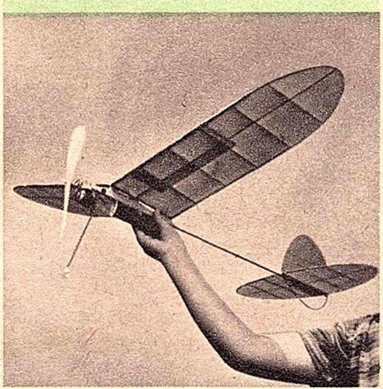
His battery-equipped car has a battery-equipped radio that doubles as a portable. His office desk is furnished with a battery-powered pencil sharpener, battery-powered telephone amplifier and battery-powered swizzle stick—in case he feels the need for a mid-afternoon pick-me-up.

And so to bed, after a quick rubdown with a



POCKET-SIZE record player uses four C batteries. $68.

Emerson Radio & Tv Corp.,
Jersey City, N. J.

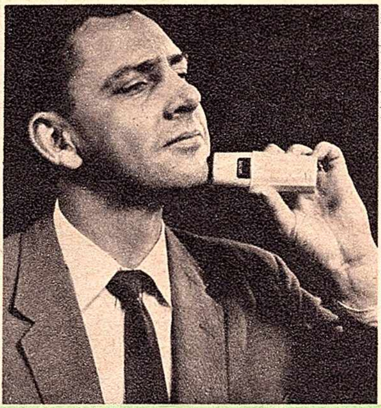


MOTOR PLANE TK-1 is first electric flying model. $5.50.

Associated Hobby Mfrs.,
1240 Gilbert Rd., Meadowbrook, Pa.

POWERED swizzle stick is for those lazy drinkers $2.98.

Jet Corporation of America,
16 S. Broad St., Philadelphia, Pa.

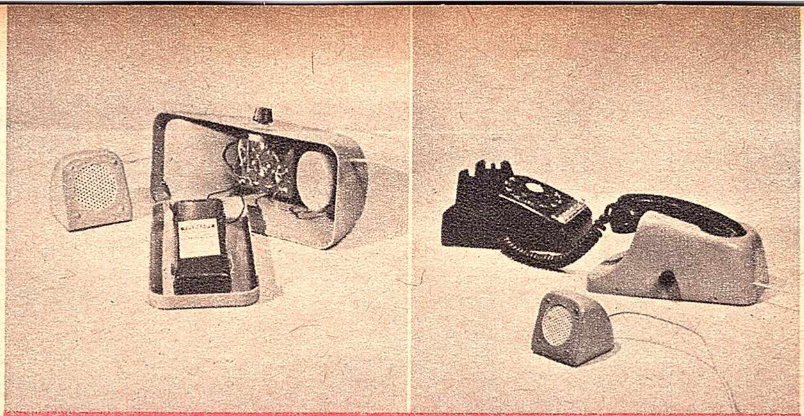


EDWARDS dry shaver uses single battery, has Swiss motor. $12.50.

Bon Marche,
Seattle 11, Wash.

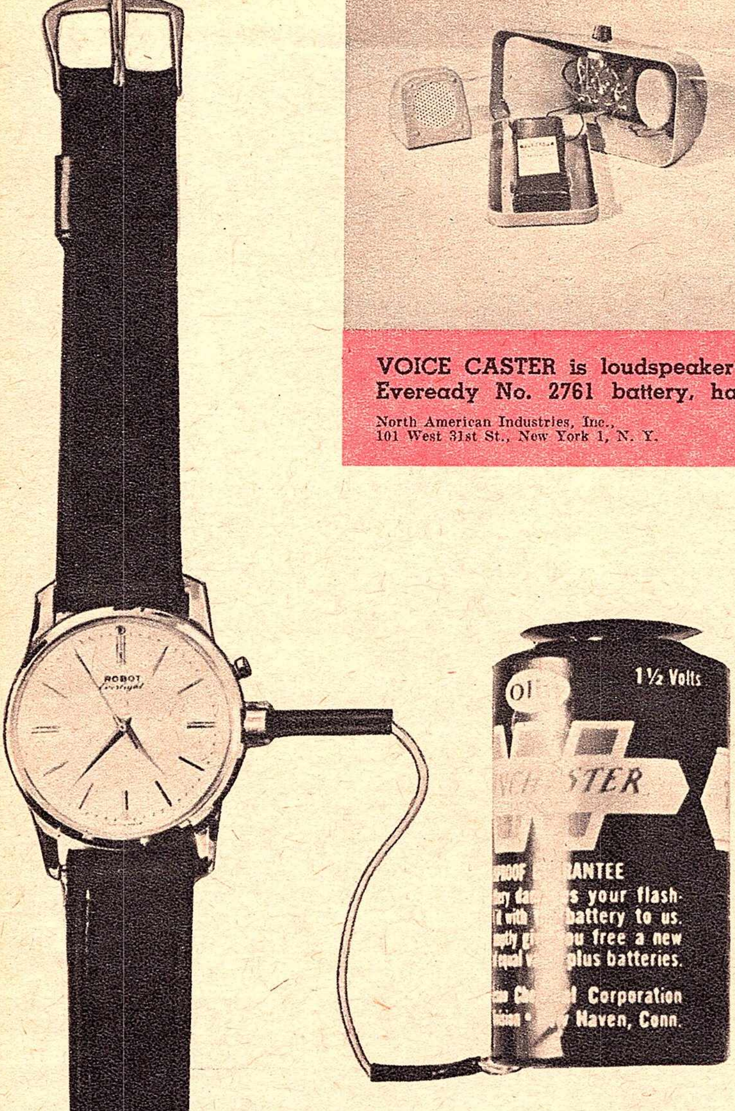
WHIRLING toothbrush does 6800 rpm. $2.98.

Standard American Dental Supply,
One Park Ave., New York 16, N.Y.



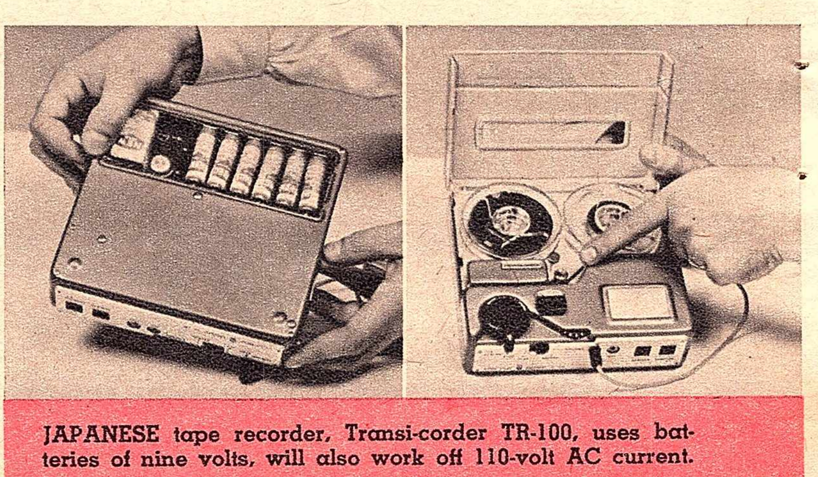
VOICE CASTER is loudspeaker for phone, uses nine-volt Eveready No. 2761 battery, has volume control. $39.95.

North American Industries, Inc.,
101 West 31st St., New York 1, N. Y.



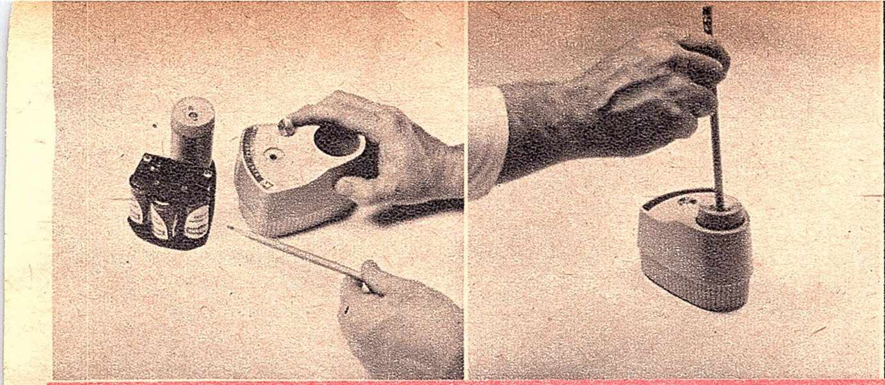
LIGHT-UP WATCH has a tiny bulb beneath the crystal, lights up at touch of button. Swiss jeweled-lever watch is charged from ordinary flashlight battery. $72.

Robot Time, Inc.,
580 Fifth Ave., New York, N. Y.



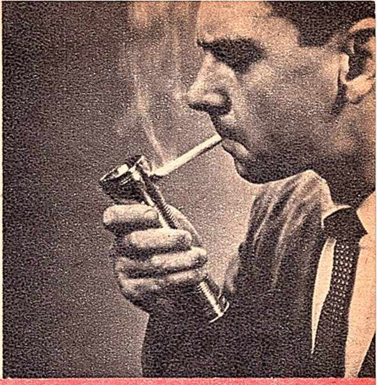
JAPANESE tape recorder, Transi-corder TR-100, uses batteries of nine volts, will also work off 110-volt AC current.

Toyomenka, Inc.,
2 Broadway, New York, N. Y.



KENT KORDLESS electric pencil sharpener uses three C cells, works by inserting a pencil in revolving cylinder. $10.40.

Hammacher Schlemmer,
145 East 57th St., New York, N. Y.



FLASHLIGHT doubles as cigarette lighter. $3.95.

V. H. Lehr, Dept. M2,
6218 Arsenal, St. Louis 39, Mo.

battery-powered massager. If insomnia defeats him, he can always play a sleep record on his battery-powered phonograph or while away the wee hours with a battery-powered pinball machine. If he should snore while snoozing, his wife can buzz him awake with a battery-powered gadget called, appropriately enough, Turn-Over-Darling.

These are just a few of the thousands of portable power packages in use today. No one has yet come up with a battery-powered electric chair (not enough demand)—but practically everything else we use or enjoy has been given added convenience and portability by The Great Battery Revolution. Manufacturers, who are understandably cheered by this state of affairs, estimate that last year the total sales value of dry batteries alone ran close to $150,000,000.

Workhorse of this battery bonanza is the familiar dry cell in the AA, C, D and No. 6 sizes. At the risk of shattering one of your most cherished illusions, we must tell you that the dry cell is not *really* dry. If you're old enough to vote you'll remember how flashlight batteries of 25 years ago leaked an oozy paste that usually stuck to the inside of the flashlight. The leaky battery is no longer with us but that paste is still there, contained within a leak-proof can.

Briefly, the dry cell is a small cylinder of zinc which not only contains the other chemicals but also serves as a negative electrode. In the center of the little can is a carbon post with a metal cap. This is the positive electrode and also conducts the current to the outside circuit.

Between the zinc and the carbon is an electrolyte paste filler, usually con-

RAY-O-VAC cell powers a pulsing doll heart. $2.98.

Heartbeat,
Madison 1, Wis.

HAND-I-LITE is new flashlight that can be held in mouth. $1.

Kenco Plastics,
Walker, Minn.

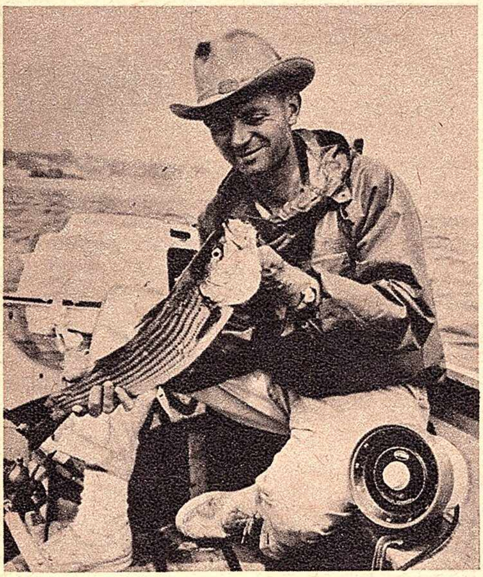
WONDERLITE recharges in 110-volt outlet. $6.38.

Geni Wonder Products,
Chatham, N. Y.

taining sal ammoniac and zinc chloride as its active ingredients. The electrolyte works on the zinc, releasing electrons to the center post. Unfortunately, it also releases hydrogen atoms which coat the center post. As the positive electrode becomes coated with hydrogen, the cell becomes polarized and its electrical output drops.

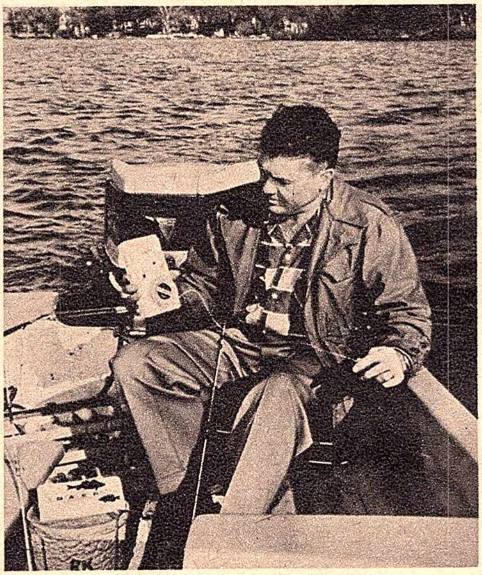
To prevent this, a depolarizing mix containing manganese dioxide is packed between the electrolyte paste and the carbon electrode. Oxygen atoms in the depolarizing mix combine with the hydrogen atoms to form water, depolarize the cell and prolong its useful existence. All clear?

Incidental intelligence: All batteries are DC only. A single unit in a battery is called a cell. A cell rarely provides more than 1.5 volts. Batteries provide higher voltages when cells are connected in series. A No. 6 dry cell is so called because it's six inches high. A



RAYTHEON'S portable depth sounder has a mercury battery, shows depth, fish. $125.

Raytheon Co., Waltham 54, Mass.



AQUA-TEMP notes water temperature for better fishing. Battery is a Burgess Z.

Thermo Products Co., 3727 N. Palmer St., Milwaukee 12, Wis.

CUSHMAN Electric Truckster has 50-mile range with lead-acid or Edison batteries.

Cushman Motors, Lincoln, Neb.

KIDDE'S home fire alarm (arrow) uses a six-volt battery to power entire circuit. $99.

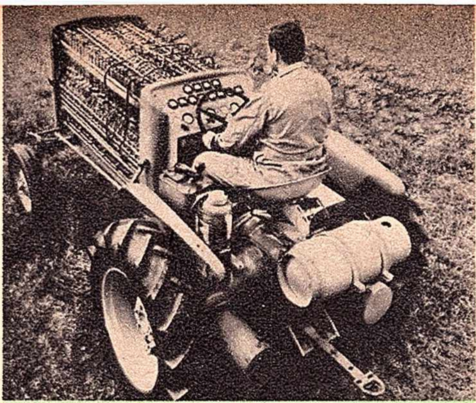
Kidde Ultrasonic & Detection Alarms, Clifton, N. J.

dry cell is a *primary* battery, generating electricity by chemical action. *Secondary* (storage) batteries are charged with electricity before they can deliver it. The dry cell developed from the first crude battery devised by Alessandro Volta in 1800. For his ingenuity, a unit of electricity was named after Volta—and if you think it's the ampere you just haven't been paying attention.

Earliest commercial dry cells were used to operate door bells and buzzers. The bell-ringing transformer took over this job. Then dry cells were used in the ignition systems of cars, boats and tractors—only to disappear when the magneto was developed. The dry cell then drew the assignment of running the early radios. This task, too, was eliminated when power radios came into popularity. Dry cells have even lost out in portable radios since the development of "Mini-Max" and "Wafer Cell" batteries (which are greatly miniaturized dry cells).

But in spite of these defeats by more efficient devices, dry cells are flourishing today as never before. Inventors are using them to power every conceivable kind of inexpensive and portable device, and the development of the transistor has increased their use in products that would ordinarily require a stronger power source.

In addition to the items illustrating this article, [*Continued on page* 162]

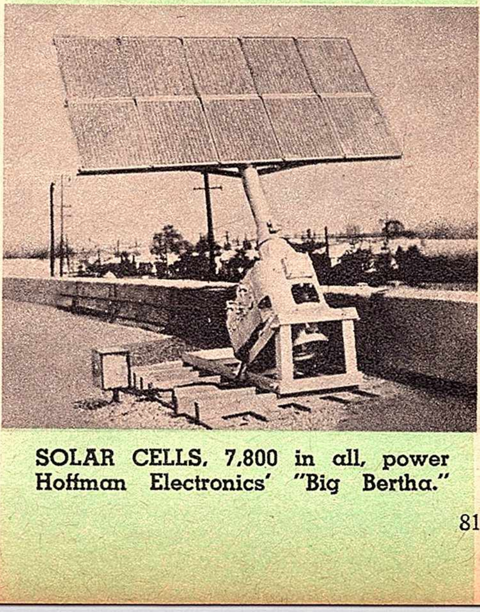


FUEL CELLS, 1,008 of them, drive an experimental Allis-Chalmers tractor.

ELECTRIC power from ionized gas is GE process—magnetohydrodynamics.

WRIGHT CYCLONE
RADIAL AIRCRAFT ENGINE

MONOGRAM'S model of Wright Cyclone 9 engine uses battery to turn prop. $2.98.

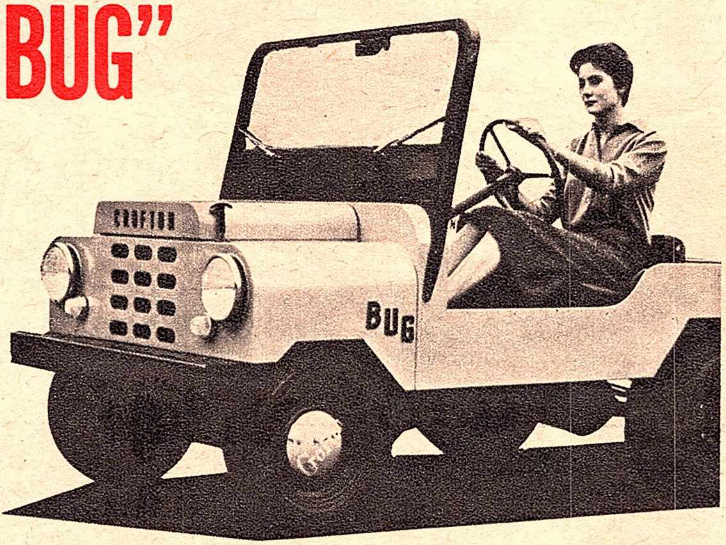


SOLAR CELLS, 7,800 in all, power Hoffman Electronics' "Big Bertha."

MEET THE "BUG"

"THE 'Bug' is handier than a thousand dollar bill . . . and not much larger," according to its makers. The rugged little 109-inch-long utility rig weighs only 1,100 pounds and totes a 1,000-pound payload. It has a three-speed transmission and a 35-hp engine. Width is only 48 inches.

The bright yellow Bug can be used as a beach buggy or by sportsmen, postmen, farmers, to pull gang mowers, etc. It is available with such optional equipment as dual rear wheels, Powr-Lok differential, folding canvas top, tow bar, jack, etc. Crofton Marine Engine Co., 888 Gull Street, San Diego 1, Calif., makes the $1,350 Bug. •



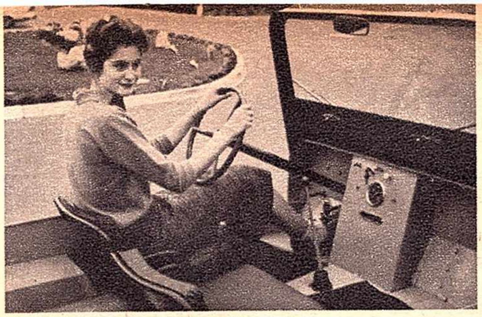
BUG is a two-passenger rig and has stowage space for gear in rear. It has eight-gallon capacity gas tank.

FOLD-UP SCOOTER

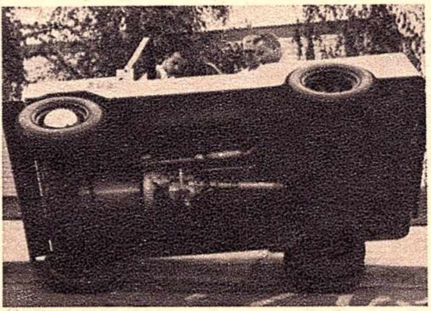
SCOOTER in a suitcase can be rolled along on casters; its total weight is 51 pounds.

JOYRIDE is the name of this 51-pound fold-up aluminum scooter. The wee putter has a 2¼-hp engine and a 40-mph top speed. It is designed to transport commuters to and from the station. It takes only 15 seconds to fold up to suitcase size and can be stored in closet or checkroom. Price of the scooter, which gets 80 to 100 mpg, is $174.50. I. R. Stevens & Co., New York. •

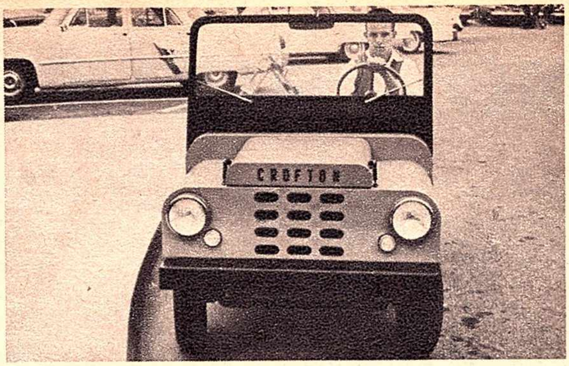
WHEN you feel like taking a ride, merely unzip case.



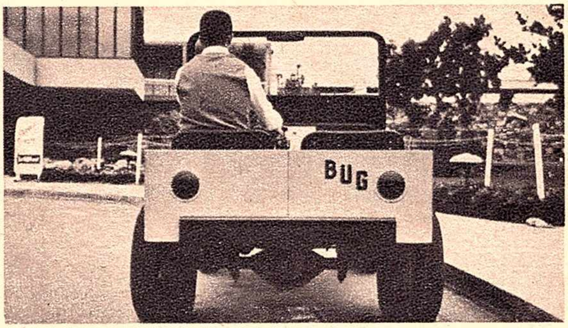
DASHBOARD is extremely simple. Seat on driver's side is adjustable and Bug's legroom is ample.

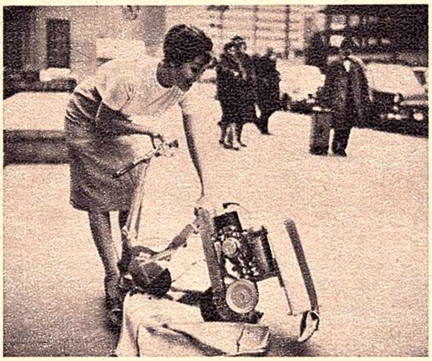


TILTED Bug displays its transmission and spare tire stowed under rear end.

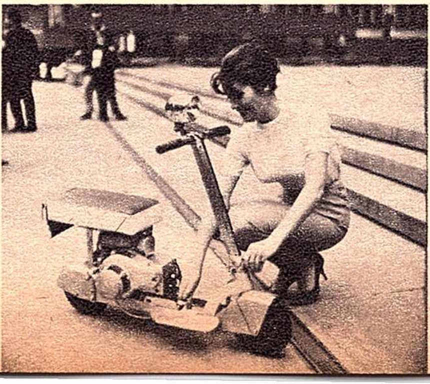


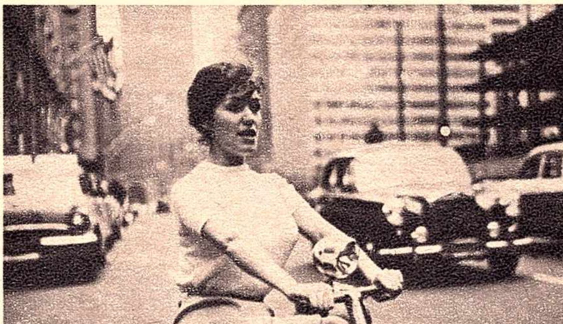
HEAD-ON view shows off the Bug's austere grille, above. Dual tires at rear are optional, below.





FOLD-UP job is unfolded in a jiffy, above, and is ready to drive, below.

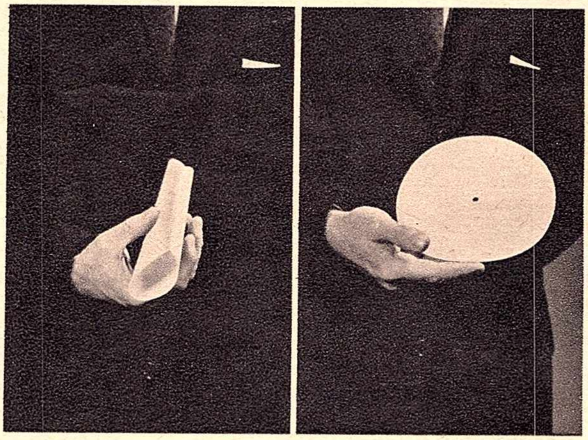




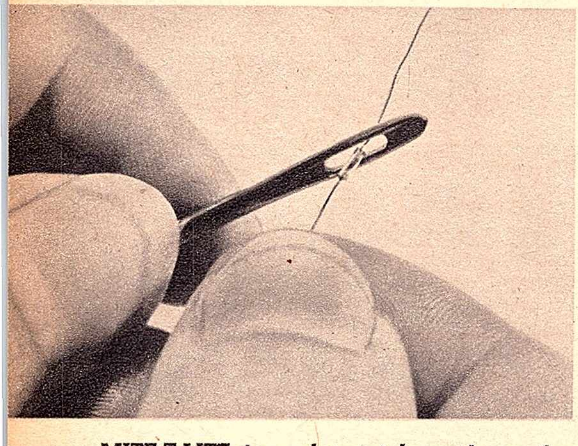
AWAY she goes. Two-wheel job has a top speed of 40 mph, travels 80 to 100 miles on gallon of gas.

NOW SEE THIS!

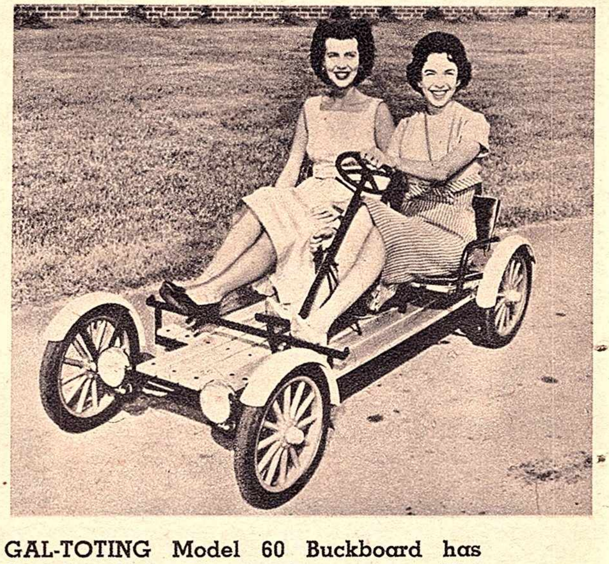
RUSSIAN surgical stapling machine is used to tie off major blood vessels of the heart and lungs and to stitch sections of the heart. Machine inserts staples made of vitallium, a chemically inert metal, as substitute for hand suturing. Stapler was given to Maimonides Hospital, Brooklyn, N. Y., by the Soviet Institute of Chest Surgery.



PLIABLE, unbreakable high fidelity records of plastic can be rolled in a mailing tube or inserted in cereal boxes, books and magazines. The novel platters will be made with basic seven-inch diameter in 33, 45 and 78 rpm size. Records weigh ⅛th of an ounce, will sell for about five cents each. Rank Audio Plastics, New York, N. Y.



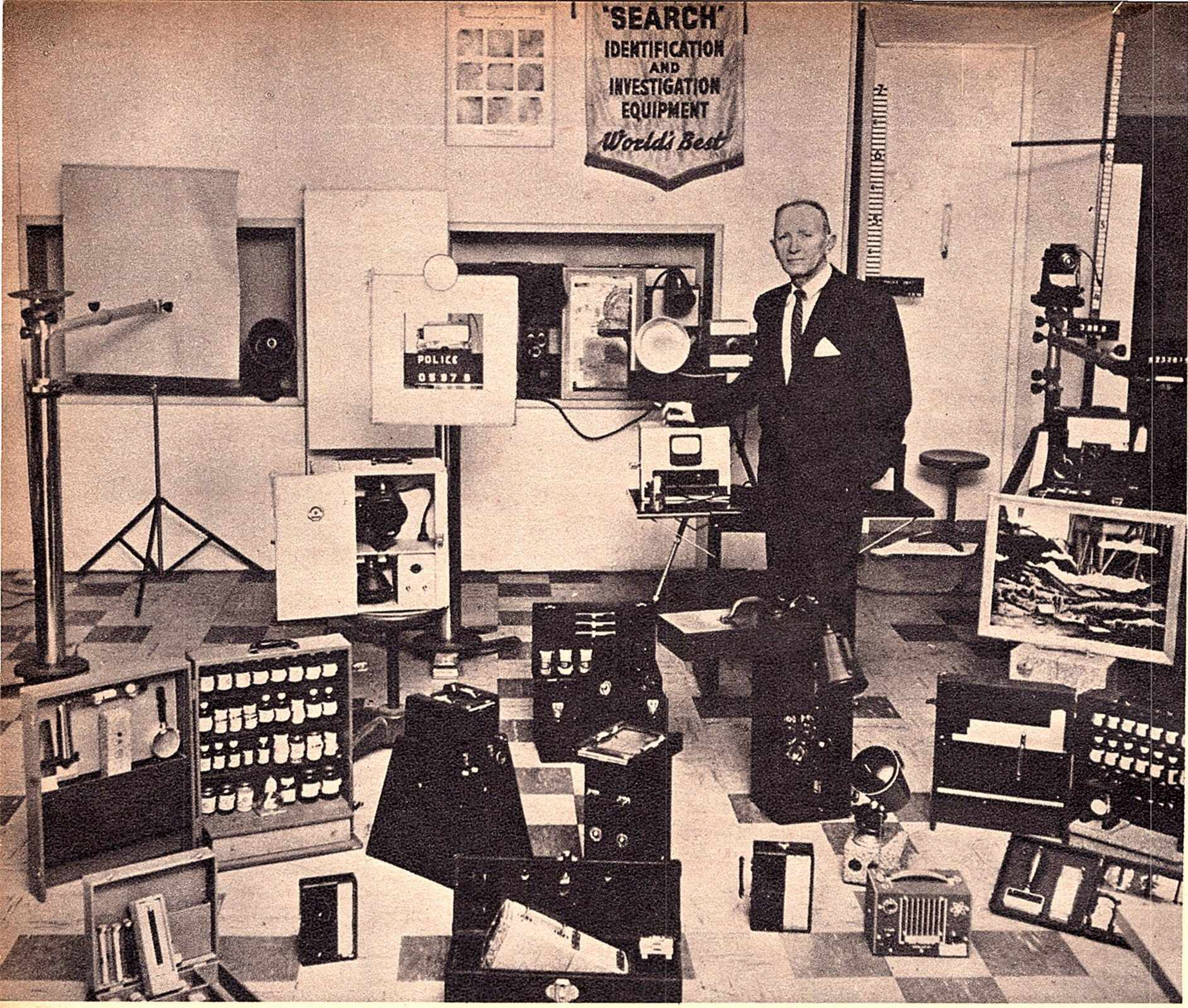
MITE-T-LITE incandescent lamp is so tiny it can pass through the eye of a darning needle. The new microminiature lamp now being produced by Sylvania Lighting Products has a filament less than one-tenth the diameter of a human hair and can be seen in a normally illuminated room. It is the smallest incandescent lamp ever made.



GAL-TOTING Model 60 Buckboard has three-hp, four-cycle gasoline engine. The rig is 78 inches long, has neutral, forward and reverse, mechanical brakes, pneumatic tubes and tires. Vehicle is not intended for highway use but will travel up to 15 mph. Price is approximately $250. McDonough Power Equipment, Inc., McDonough, Ga.

MIMI

"CUDDLE up in here," says our cuddly product tester, "and even at 25 below zero you just won't care what goes on outside." MIMI's facts are backed by scientific tests of this Acrilan-filled nylon sleeping bag that were conducted on Mt. Washington. Acrilan replaces down filling for the first time in this bag; the manufacturer says it's cheaper, mildew-proof and warm. Called the Conqueror, this 3½-lb. bag is made by GIC Sporting Goods, 141 E. 44th St., New York 16, N. Y., sells for $25. Air mattress is optional.



CRIME laboratory boss Sirchie and some of his company's scientific crook-catching kits.

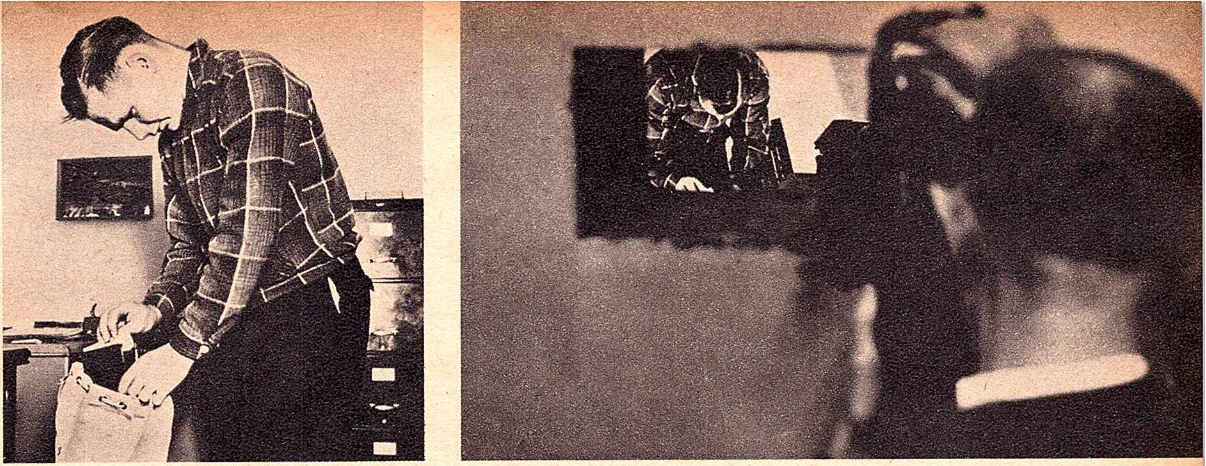
SHERLOCKS OF THE LAB

MANY a crook is probably sitting in his cell right now, staring at his Chinese checker board and silently cursing the Sirchie Fingerprint Laboratories in Camden, N. J. The reason would be Francis J. Sirchie, 53, who has been active in crime detection for 30 years, especially in developing new methods for catching thieves.

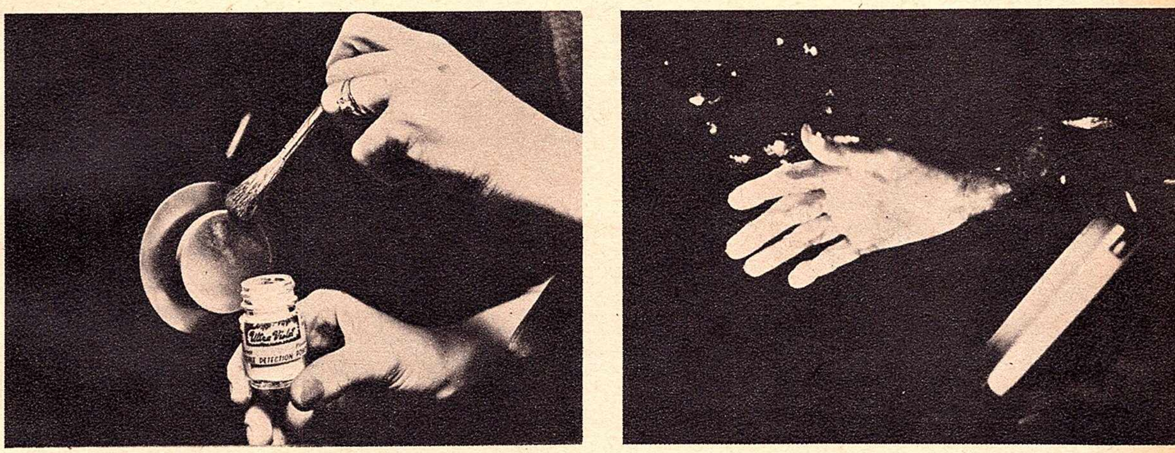
Since 1930 Sirchie has been supplying law enforcement agencies, including the FBI and Scotland Yard, with various detection kits. These include many types of ultraviolet detection powders which can be "read" under black light, fingerprint cameras, lie detectors, a variety of electronic booby traps, trick wall paintings and expensive homicide kits which include just about every modern piece of detection equipment that can be used for the apprehension of criminals at the scene of the crime.

The majority of Sirchie's equipment is confidential and cannot be purchased by any person not connected with a legitimate law enforcement agency.

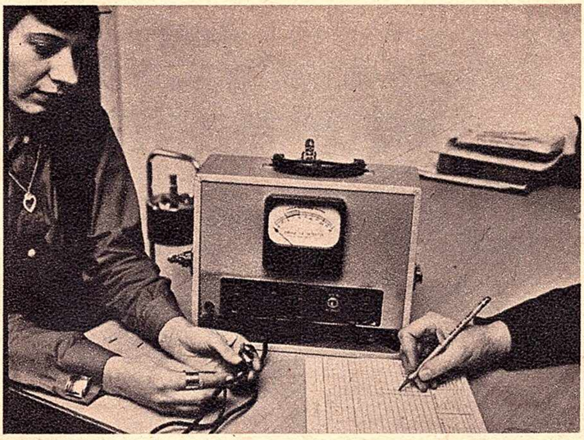
It's tough to be a crook these days—you're lost without a Ph.D. •



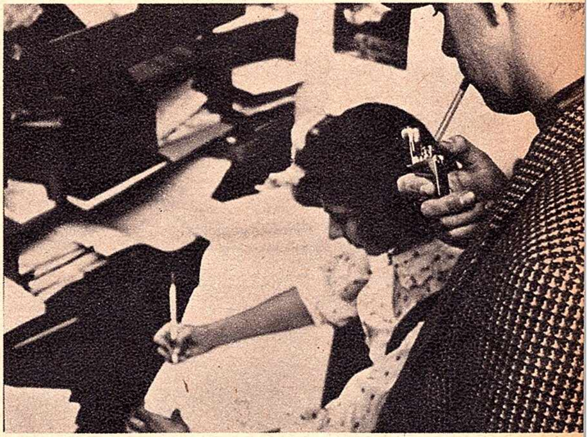
TRICK WALL PAINTING below face of model demonstrating office theft, left, enables law enforcement officers to photograph his activities from the other side of the wall, at right.



ULTRAVIOLET invisible detection powder painted on door knob, left, proved maid had been stealing from employer. Maid's hands glowed under black light as pictured at right.



PORTABLE lie detector clamps only to the forefingers and is simple unit to operate.

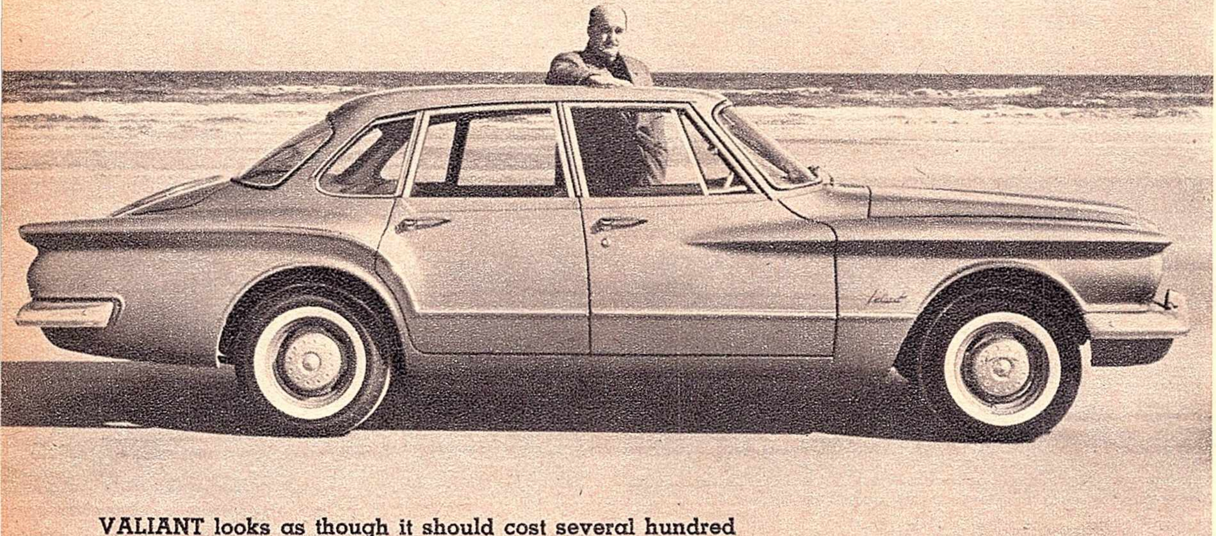


CAMERA in cigarette lighter films ledger information of a firm under investigation.

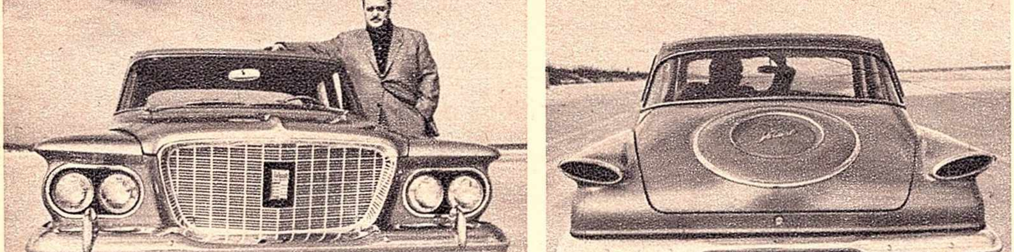
McCAHILL TESTS

The VALIANT

Looks, horsepower and speed make the new Valiant the top dog in the compact field, in Tom's opinion.



VALIANT looks as though it should cost several hundred dollars more than its closest competitors, reports Tom.



SPORTY aluminum grille of Valiant is slightly recessed, gives car a hefty look. Tail treatment is simple with canted, oval taillights, simulated wheel cover on trunk lid.

By Tom McCahill

I NEVER owned a really good dictionary but even my $1.98 Drugstore Special has a lot to say about the word "valiant." It can mean "vigorous and robust . . . stouthearted and brave" . . . or just plain everyday "heroic." So you can imagine the embarrassment the guy who thought up the name for Chrysler's new compact car would have suffered if it had turned out to be a real pig. Fortunately for the Chrysler Corp., they wound up with a late entry that is the best of the new compacts.

The 1960 Valiant has more horsepower, more performance, more looks, more size and more price than its two closest rivals, Corvair and Falcon. Pricewise, however, a $100 bill will just about cover the spread of the three. Whether you consider the Valiant a giant small car or a pigmy big car is a matter for you to decide. It is nine inches longer than a Studebaker Lark and about an inch narrower. It is also longer than the Falcon or Corvair, which are both five to six inches longer than the Studebaker Lark. By some odd quirk, many people think the Lark is a bigger car than the new compacts of the Big Three. Actually, a car's size should be judged by wheelbase and tread. In this department, all the small cars (which includes Rambler as well) are so close that the differences aren't worth exploring.

Without booting this folderol around any longer, let's roll the facts on the table and consider the Valiant for what it is, compared to its competitors. Despite any claims based on the performance of hopped-up factory entries, of all the compacts available *to you* in the nation's showrooms, the Valiant is the fastest by ten to 14 miles an hour. On Daytona's famous Measured Mile, where I tested the Valiant, it averaged 98.3 mph, which is a good 13-plus miles per hour faster than either the standard Corvair or Falcon. Now, you don't get this performance for nothing. Both the Corvair and Falcon will whip the Valiant in an economy run, all things being equal.

In my opinion, the Valiant also beats the others in looks. To me, it looks as though it should cost several hundred dollars more than its two closest competitors. The Valiant sports a six-cylinder, tilted, in-line engine which unravels better than 100 horsepower. "Then," you may ask, "*is* the Valiant the Perfect Small Car?" My answer to that would have to be, "It's the best of the compacts but quite a ways from being perfect."

Let's see where this top dog in the small car field falls down. To begin with,

ROADABILITY and handling are good, says Tom. However, he noted peculiarity on tight, left-hand turns.

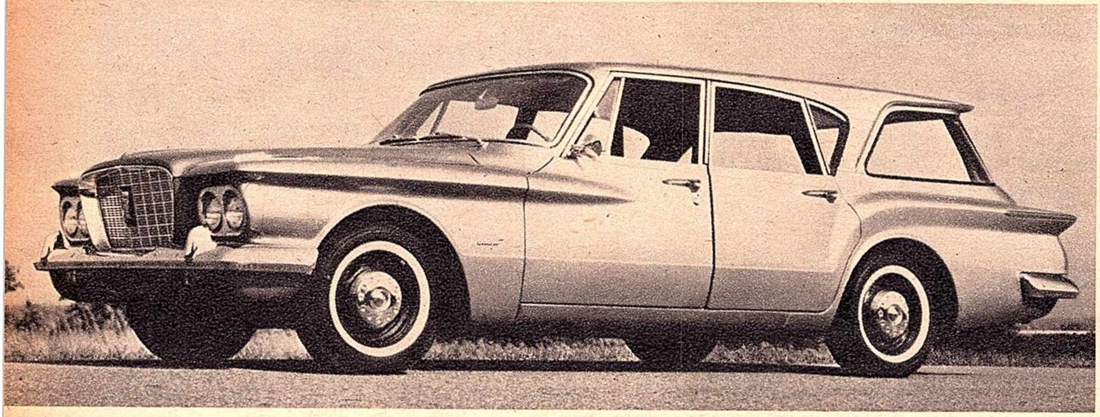
TEST CAR SPECS

MODEL TESTED: **Valiant 200 four-door sedan**

ENGINE: **6** cyls; **170** cubic ins; **101** brake hp; **155** ft-lbs max torque; **8.5** to **1** compression ratio. Bore **3.40** ins; stroke **3.12** ins. Fuel required: **Regular.** Standard axle ratio: **3.55.** Wheelbase **106.5** ins; length **184** ins; height **54** ins; width **70.4** ins; front tread **56** ins; rear tread **55.5** ins. Weight **2,735** lbs. Gas tank capacity **13** gals. Turning circle diameter **37.1** ft. Tire size **6.50X13.**

PRICE (without optionals): **$1,946**

PERFORMANCE: **0-30** mph, **4** secs; **0-60** mph, **13.4** secs. Top speed **98** mph. All times recorded on corrected speedometer.



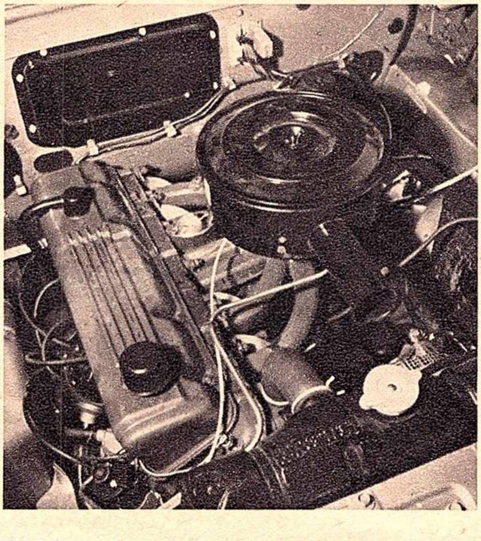
VALIANT SUBURBAN four-door wagon is 185 inches long with 106.5-inch wheelbase.

the upholstery will never give you the idea that they've kidnapped any of W. & J. Sloane's craftsmen. It's good, serviceable stuff—but then, so is the upholstery on a subway seat. The headlining looks as if it were whipped up on Mother Sill's loom. The glove compartment is just about the right size for carrying two walnuts, not three. The instruments are pretty good, except for one idiot light instead of an oil gauge.

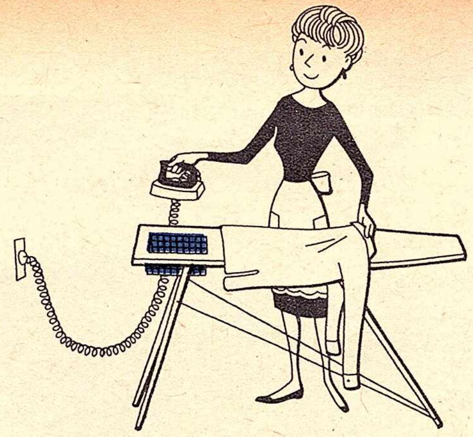
Handling-wise, the Valiant has an interesting peculiarity which *is* pretty unusual. The six-cylinder engine, in the best race car tradition, is mounted at a 30° angle from straight up and down, in order to accomplish a lower hoodline. In the Valiant, the engine is slanted to the right (from the driver's position), which plays some odd tricks with the car's balance when cornering. As most all regular readers of this test series must know, I believe Chrysler products have the finest suspension being offered in America and are the best road cars because of this. Now, this Chrysler torsion-bar suspension has also been built into the Valiant. However, because the engine is mounted off-center to the right, the characteristics when you make a hard right turn are quite different from those when you make a hard left turn.

When I first drilled this Valiant over the Daytona International Speedway sports car course, I found it the best-handling American car I've ever driven through a tight turn—while bending to the *right*. When I hit a tight curve going to the *left,* I experienced a very deep plowing effect. Later, in making circling tests on the beach, I found that in left turns I could almost spin the Valiant on its nose in its own length. This is something the average driver might never notice, even on several trips from coast to coast. But on a tough mountain road, if he descends too fast, he'll definitely feel the difference.

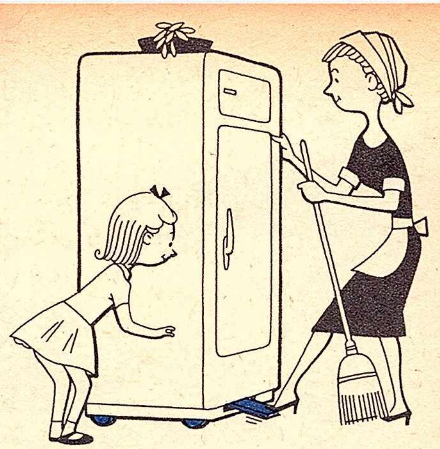
This condition isn't dangerous but it is interesting [*Continued on page* 157]



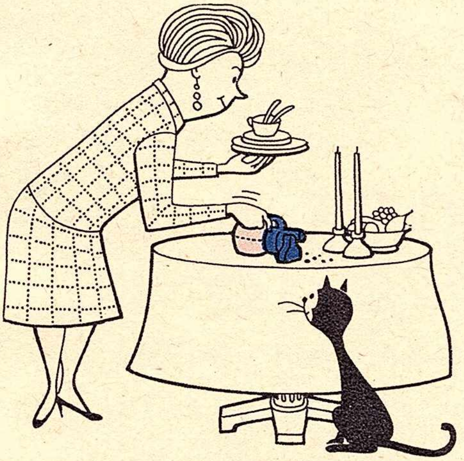
ENGINE is water-cooled in-line six, inclined 30°. It gives car 98-mph top speed.



IRONING BOARD with an insulated, built-in case to hold hot iron, prevent kids from getting burned. Tom E. Curtis, Temple, Pa.



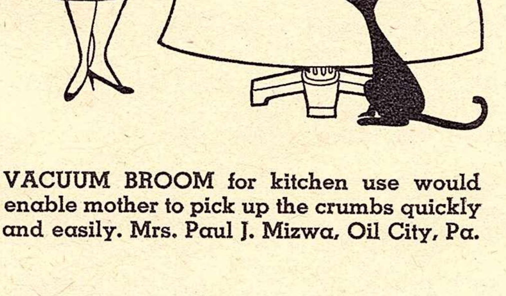
JACK with wheels for heavy appliances. Toe pedal would lower wheels to move appliances to clean. Mrs. C. Wray, Cullman, Ala.



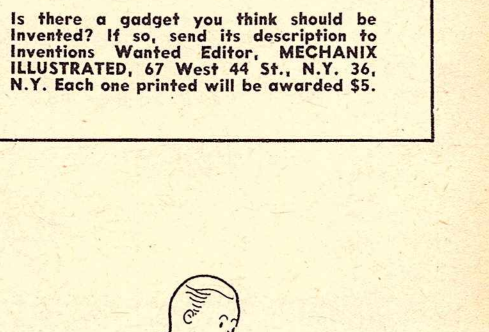
VACUUM BROOM for kitchen use would enable mother to pick up the crumbs quickly and easily. Mrs. Paul J. Mizwa, Oil City, Pa.

INVENTIONS WANTED!

Is there a gadget you think should be Invented? If so, send its description to Inventions Wanted Editor, MECHANIX ILLUSTRATED, 67 West 44 St., N.Y. 36, N.Y. Each one printed will be awarded $5.



EIGHT-CYLINDER auto engine which would run on four cylinders in city traffic to conserve gas. Mrs. Hazel Scott, Erie, Pa.



MUFFLER for musical instruments would let Junior practice, not disturb people outside of room. Karen Phelps, Milwaukee, Ore.

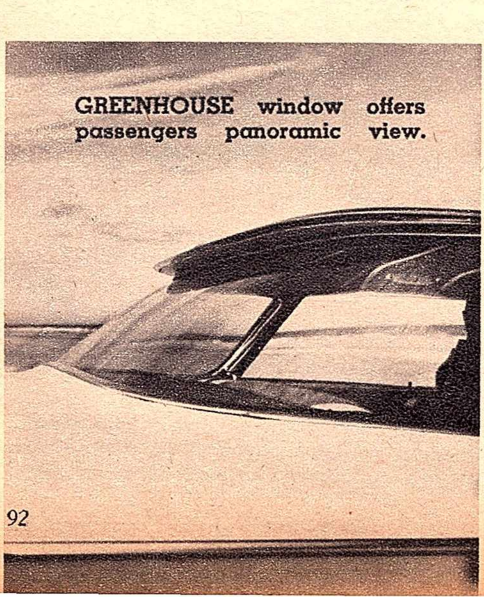
McCAHILL TESTS

UNCLE TOM donned a snazzy jacket to pose with the jazzy new Olds Super 88 for '60.

THE OLDSMOBILE

Performance, comfort, endurance and reliability are the hallmarks of this big, 115-mph-plus luxury barge, reports car tester McCahill.

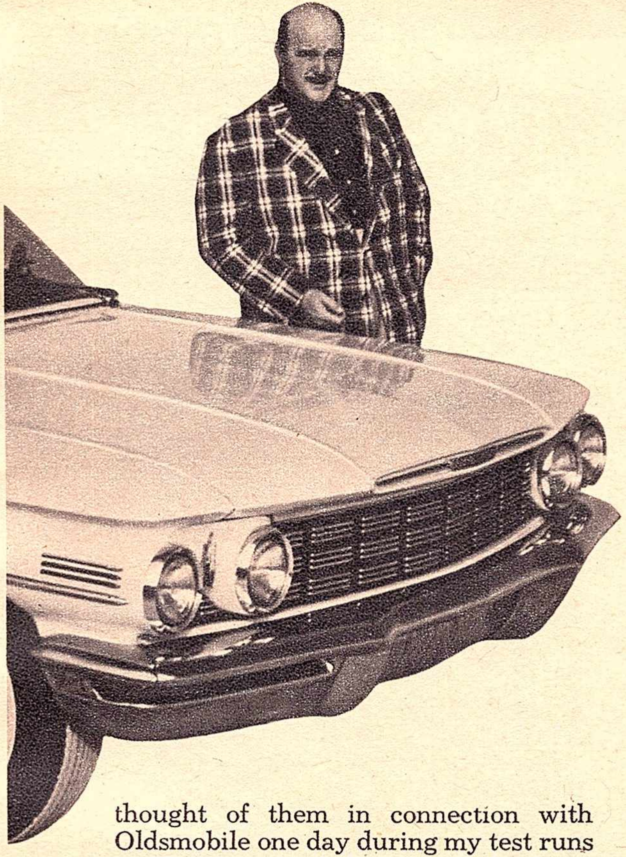
By Tom McCahill



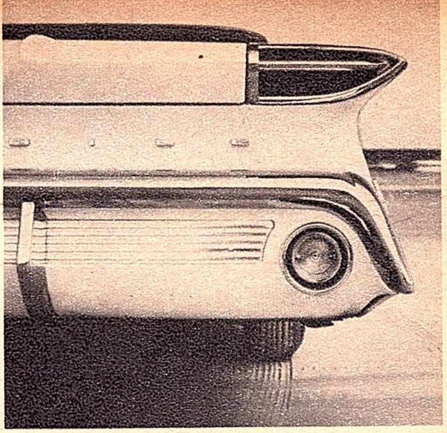
GREENHOUSE window offers passengers panoramic view.

IF Ransom E. Olds (of curved-dash fame) could have looked ahead, as he burned up the sands of Daytona Beach a half-century ago, and seen the cars bearing his name in 1960, the chances are he would have flipped a gusset. Though Mr. Olds wound up his life possessing more dough than the Denver mint, he never knew the luxuries his little pot on wheels would one day offer, such as air conditioning, thermostatically-controlled heating system and far better than 100-mph performance.

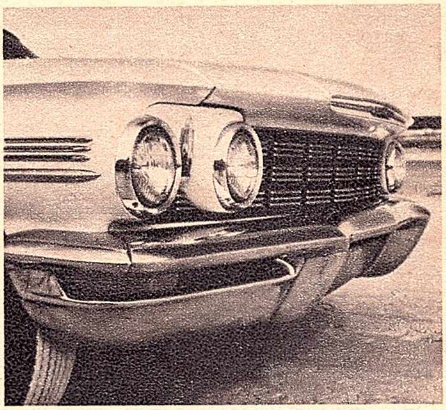
Of course, these features are all available in competitive cars, too, but I



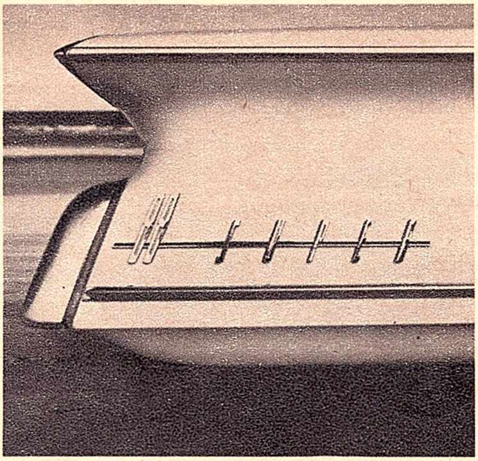
thought of them in connection with Oldsmobile one day during my test runs in Florida. As I drove past the large house in Daytona Beach belonging to ex-President Batista of Cuba, I suddenly remembered that this showplace



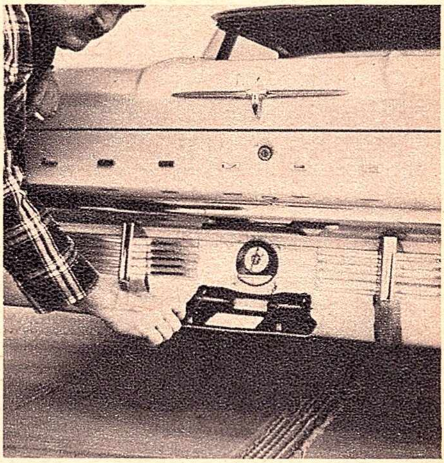
REVAMPED rear has chrome strips separating taillights in ends of mild fins.



DIP in hood on '59 models has been replaced by upper lip, redesigned grille.



FLAT fin sweeps gently along rear end. The chrome strip on bottom runs length of car.



MIDDLE of rear bumper neatly hides the gas tank filler cap of 20-gallon tank.

was once owned by R. E. Olds. I wondered what the old boy would have thought of this full-powered luxury barge I was driving, complete with two-speaker radio and the fuzzy baritone erupting therefrom (a hardship R. E. Olds never had to endure).

I was headed for the Daytona International Speedway to do a little serious testing. Once there, it didn't take very long to determine that this car, the Super 88 sports sedan, delivered more eye-popping performance than Jayne Mansfield. It can top 115 mph and bat out 0-60 mph in 8.7 seconds. It jumps from 40-60 mph in 4.1 seconds and I was impressed with its solid mid-range guts, or should I say torque.

The ride over bumpy, rutted roads was as soft as a prizefighter's nose. But to accomplish this, some sacrifices were made in suspension stiffness. When I took the Super 88 around the sports car course at the Daytona track, I found it as well-cast for the job as Frank Sinatra doing the Life Of Sidney Greenstreet. Around the first bend, which sports cars take at 70 mph (and some American cars at 60 mph), I shot into orbit and lost the car completely at a hair over 50 mph. I tried this bend four times and was off the road like a singed rabbit on each occasion. If I owned an Olds Super 88 the very first thing I'd do would be to take it to the nearest shop specializing in heavy-duty shock absorbers and tell them to "tie this balloon to the ground." I might even add a couple of Air-Lifts, or try to get heavy-duty springs from the dealer.

In a high-speed emergency the difference between a car with which you can thread the eye of a needle and one that will slop on you can be extremely important. If you want a forinstance, here's one that happened to me less than two weeks ago. I was heading south through North Carolina, doing about 60 mph. A guy in a little old car was creeping along ahead of me with one wheel in the gutter. I pulled toward the center of the road to pass him. Suddenly, without any signal whatsoever, this character made a hard left turn directly across my path. My car was loaded to the [*Continued on page* 168]

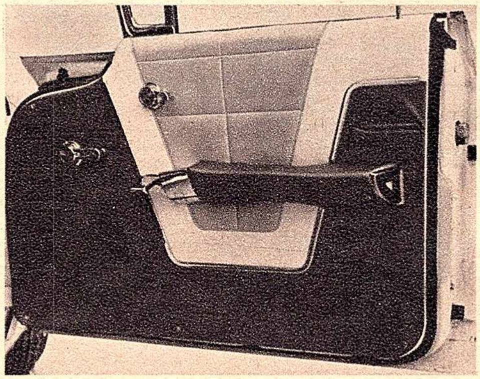
TEST CAR SPECS

MODEL TESTED: **Oldsmobile Super 88 four-door Holiday sedan**

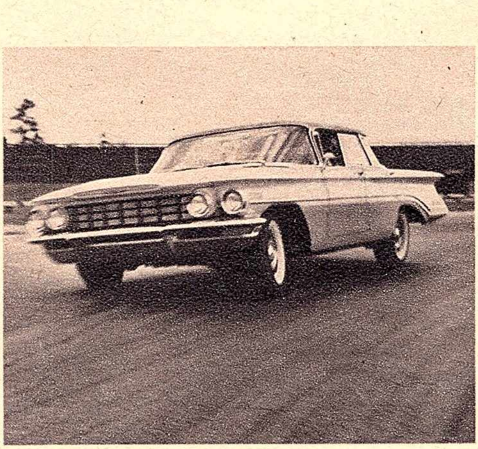
ENGINE: **V8** cyls; **394** cubic ins; **315** brake hp; **435** ft-lbs max torque; **9.75** to **1** compression ratio. Bore **4.12** ins; stroke **3.68** ins. Fuel required: **Premium.** Standard axle ratio: **2.87.** Wheelbase **123** ins; length **217.6** ins; height **56.1** ins; width **80.6** ins; front tread **61** ins; rear tread **61** ins. Weight **4,178** lbs. Gas tank capacity **20** gals. Turning circle diameter **43.1** ft. Tire size **8.50X14.**

PRICE (without optionals): **$3,402**

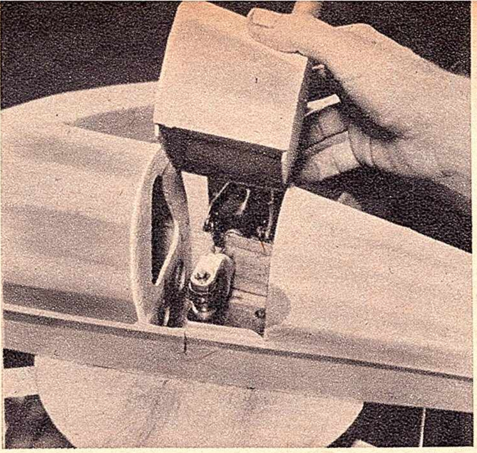
PERFORMANCE: **0-30** mph, **3.2** secs; **0-50** mph, **7.1** secs; **0-60** mph, **8.7** secs; **0-70** mph, **12.1** secs; **40-60** mph, **4.1** secs. Top speed **115-plus** mph. All times recorded on corrected speedometer.



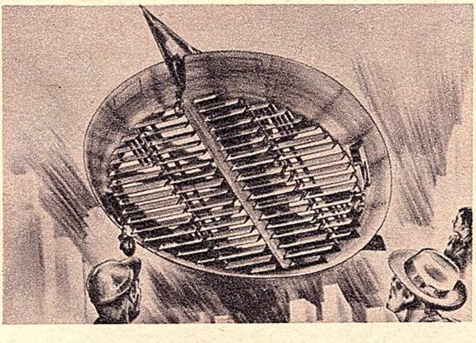
BIG, luxurious and full-powered Olds has well-appointed interior, says Uncle Tom.



SOFTNESS of suspension was noted by Tom who suggests heavy-duty shock absorbers.



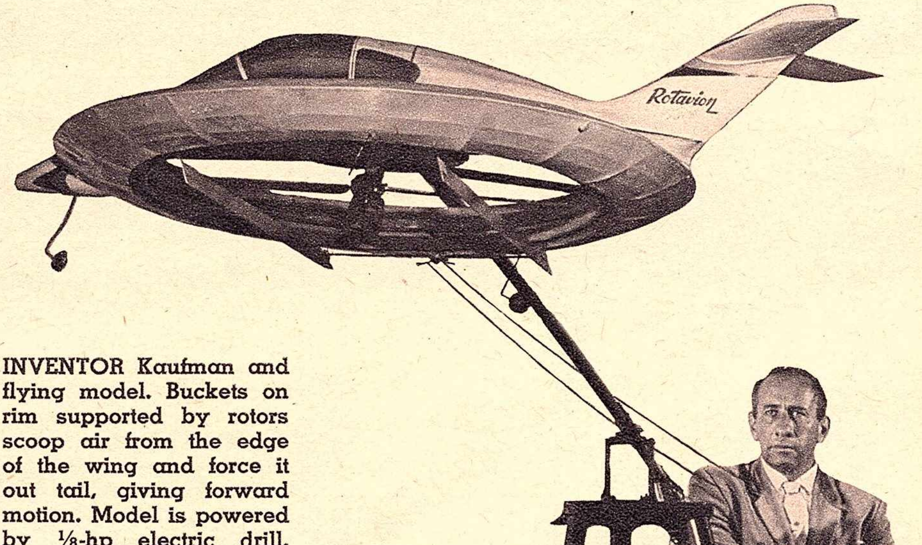
UNIVERSAL joint on top of model allows plane to maneuver on end of a steel rod.



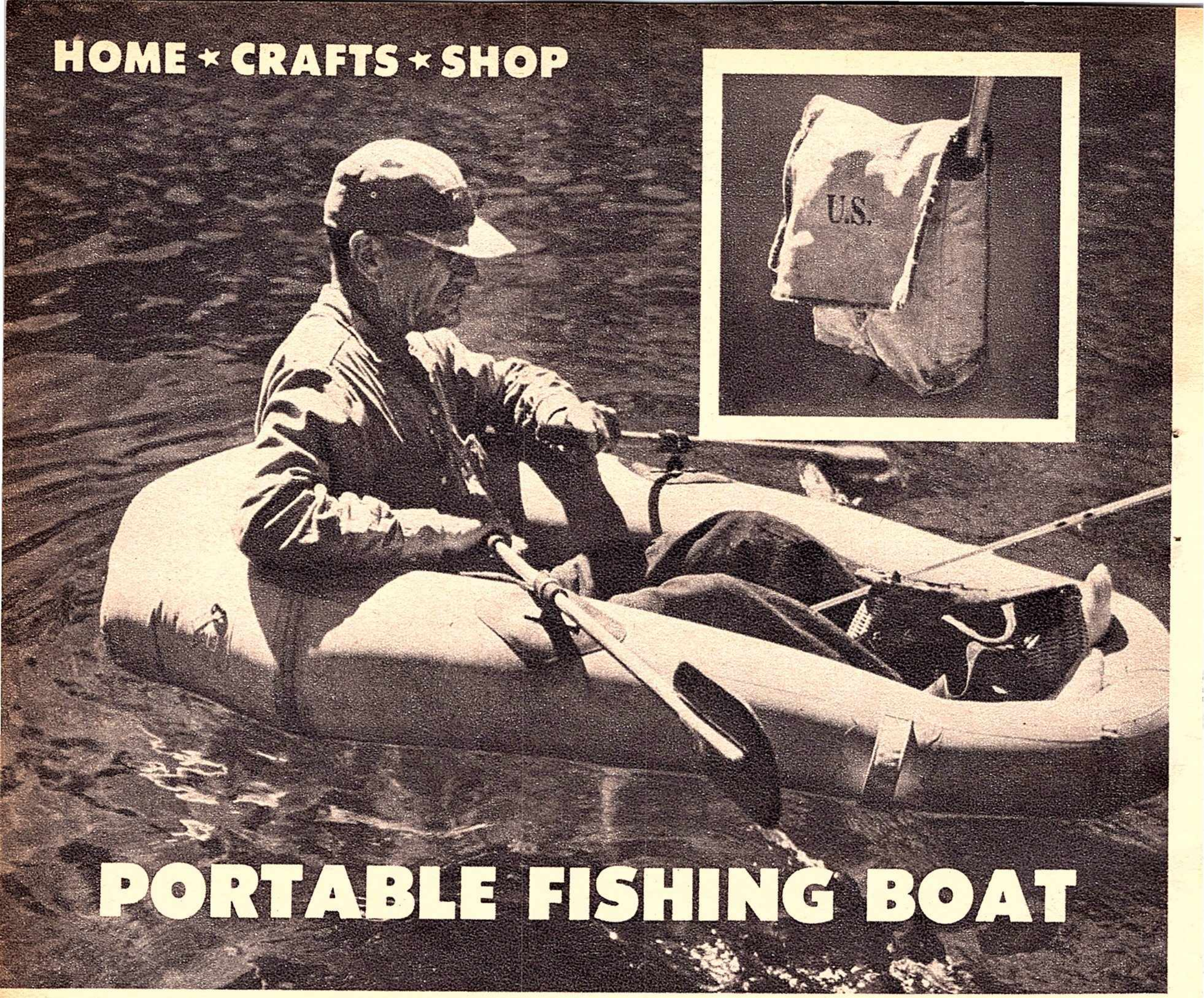
DRAWING of full-size XR-62 shows the louvers open as the craft is ascending.

FLYING FLIVVER

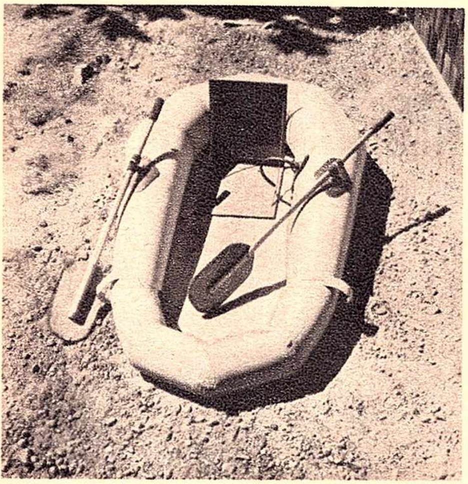
XR-62 is the name of a new "flying flivver" devised by Ben Kaufman, president of the engineering firm of Rotavion, Inc., Santa Monica, Calif. The small utility craft is both lifted and propelled by two counter-rotating rotors within the wing. Novel Venetian blind-like louvers enable the craft to ascend, descend or hover. The spinproof flivver can land safely even if the engine conks out, it is claimed. A prototype will be flown sometime this year. It will have a 200-mph top, 165-mph cruising speed with a 180-hp Lycoming engine. Kaufman eventually hopes to price his craft at about $10,000. •



INVENTOR Kaufman and flying model. Buckets on rim supported by rotors scoop air from the edge of the wing and force it out tail, giving forward motion. Model is powered by 1/8-hp electric drill.



PORTABLE FISHING BOAT



OARLOCKS are permanently attached with tire casing patches; the seat folds flat.

Use this inexpensive one-man boat for deepwater fly casting, drift fishing, trolling or just to reach an island in the lake.

By Mees Trussell

IF you enjoy fishing, chances are you've often stood on the edge of a small lake, watching the fish jump and gnashing your teeth because they weren't jumping near shore. Or perhaps you've wished you could ferry the family to an inviting island for a picnic. After many such experiences, we decided a converted one-man life raft

would be an inexpensive answer to both problems.

The surplus raft, equipped with oars and a plywood seat, can be folded into a knapsack (see insert photo at top) or stowed in the trunk of the car. The pack weighs only 11 pounds, yet the raft easily supports a 250-pound load in the water. It's so light that when we want to get to an island we attach a fly line, pay it out while one person rows across and reel it back for the next passenger!

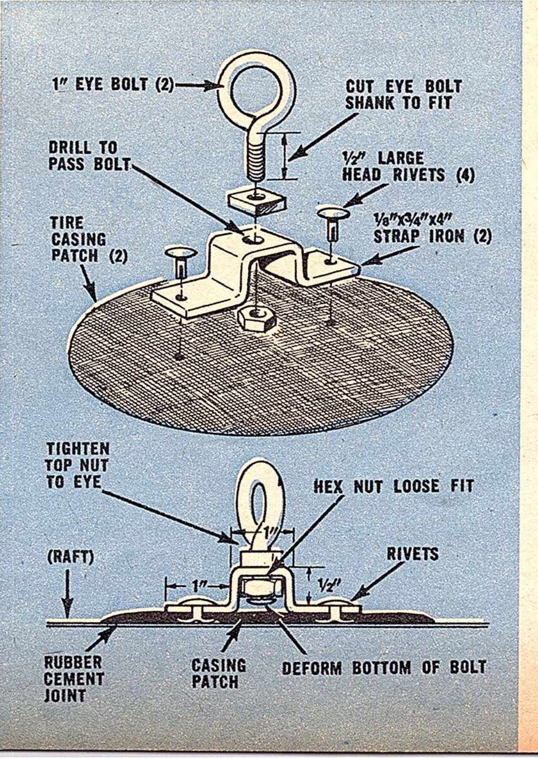
Rowing the original raft was difficult because the oars had to be tied to straps and they moved awkwardly. Then too, there wasn't sufficient back support for short people and they tired easily. Both these faults are corrected by the illustrated oarlocks and the plywood seat. The addition of a cushion insulates the seat and makes it quite comfortable.

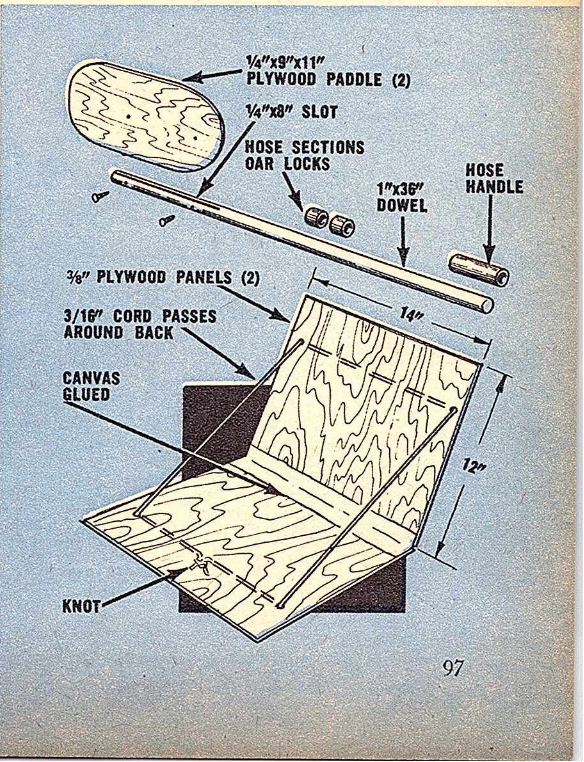
To make the oarlocks, it's necessary to drill and bend two lengths of ⅛-inch strap iron as indicated and then attach the eyebolts, using two nuts. The nuts, however, should not be made tight because the eyebolts must turn freely. The shank of each eyebolt is then shortened and peened on the end to hold the nuts in place. Then each assembly is riveted to a tire casing patch.

The oarlocks are placed where they will provide the most ease in rowing. Inflate the raft, sit in it and experiment to determine the best position. Then mark the area where each patch will be and roughen the surface with sandpaper. Next apply rubber cement, remove the protective backing from the tire casing patches and press them in place.

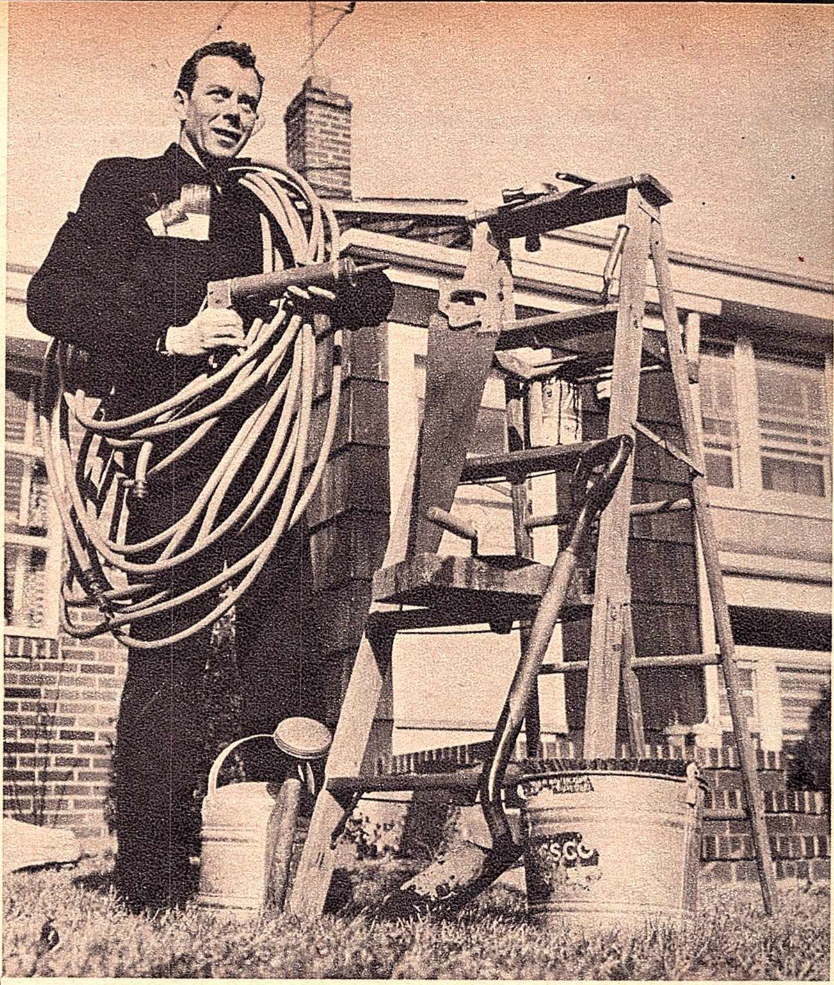
The oars are easy to make from two 36-inch lengths of one-inch hardwood dowel and two pieces of quarter-inch exterior plywood. Just slot the dowels and use glue and screws to hold the plywood paddles in place. Then, for each oar, cut two one-inch pieces of garden hose which can be slipped over the dowel. These pieces, one on each side of an oarlock, serve to keep the oar in place during use.

While the little craft is stable and seaworthy, we would not advise its use on unprotected waters where wind might make it difficult to control. But on calm lakes we've found it easy to row and have had many pleasant hours of fishing. Try it and see. For the cost, you can't go wrong. •


1" EYE BOLT (2)
CUT EYE BOLT SHANK TO FIT
DRILL TO PASS BOLT
½" LARGE HEAD RIVETS (4)
TIRE CASING PATCH (2)
⅛"x¾"x4" STRAP IRON (2)
TIGHTEN TOP NUT TO EYE
HEX NUT LOOSE FIT
1"
(RAFT)
RIVETS
1"
½"
RUBBER CEMENT JOINT
CASING PATCH
DEFORM BOTTOM OF BOLT

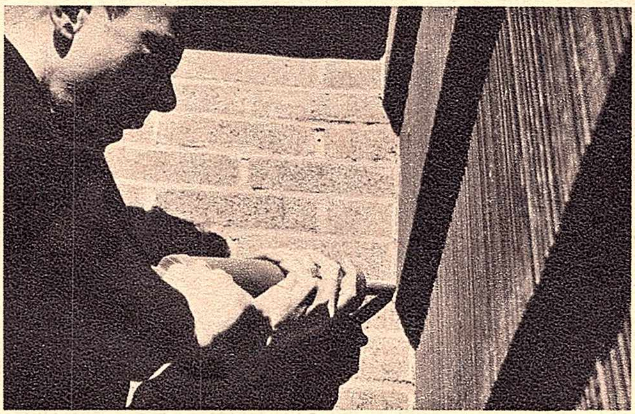

¼"x9"x11" PLYWOOD PADDLE (2)
¼"x8" SLOT
HOSE SECTIONS OAR LOCKS
1"x36" DOWEL
HOSE HANDLE
⅜" PLYWOOD PANELS (2)
14"
3/16" CORD PASSES AROUND BACK
CANVAS GLUED
12"
KNOT

SPRING REPAIRS TO YOUR HOME

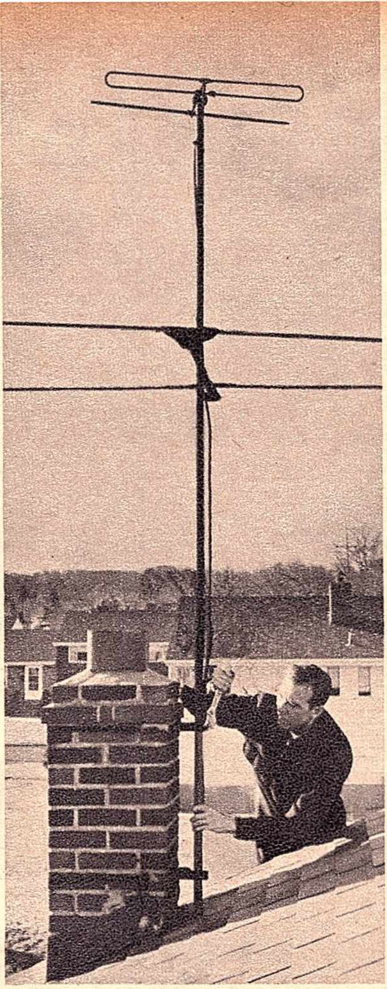


Crocuses and homeowners are once again blossoming forth to beautify the premises.

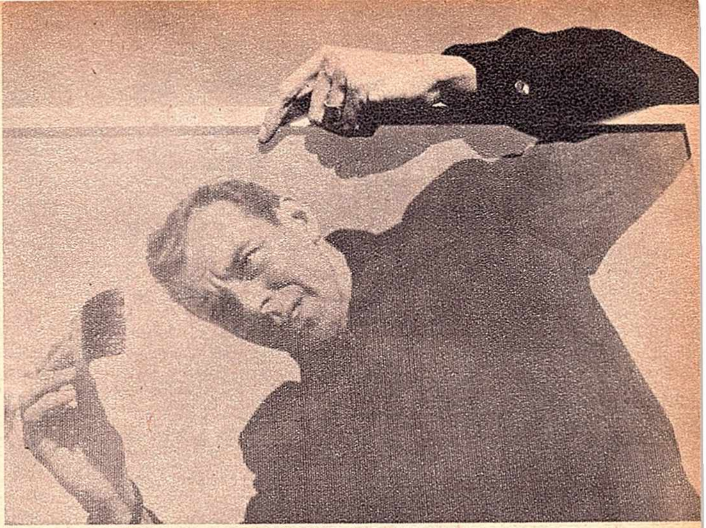
OIL locks and latch fixtures to smooth operation and prevent their rusting.



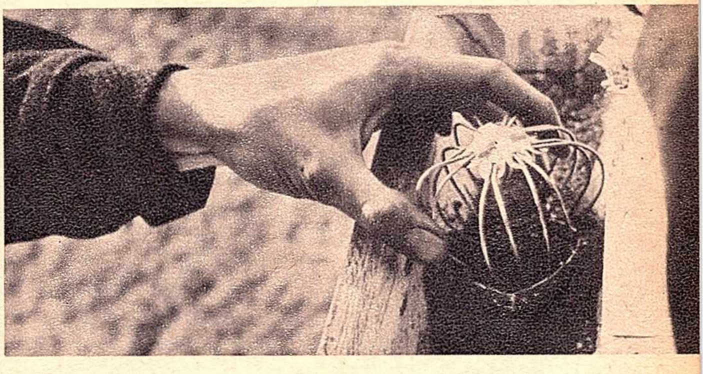
CHECK ALL JOINTS where wood abuts the stone or brick sections of the house; then, using a calking gun, recalk any fissures that may have developed during the winter.



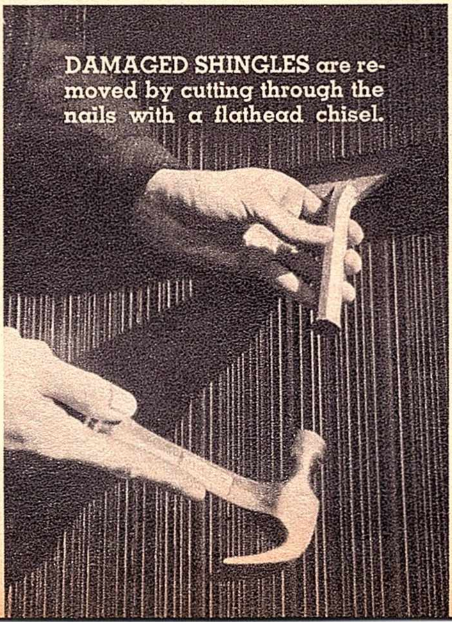
REINFORCE and if necessary replace the metal straps securing your antenna to roof or chimney.



SCREENS are protected from deterioration with a thin-flowing varnish that does not clog the mesh.

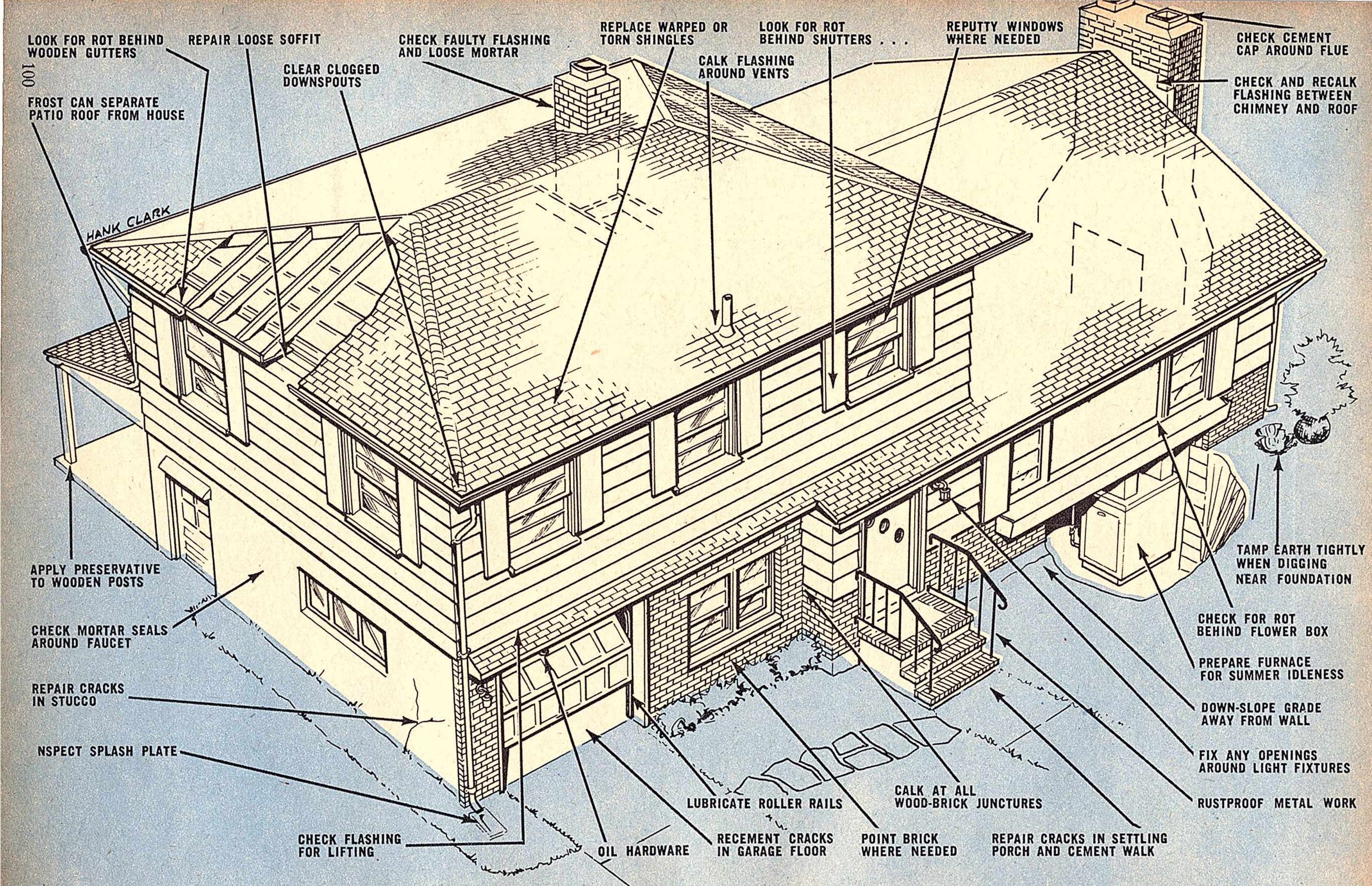


GUTTERS AND DOWNSPOUTS should be cleaned of debris and calked wherever leaks appear. Strainer over downspout keeps out leaves, twigs, etc.

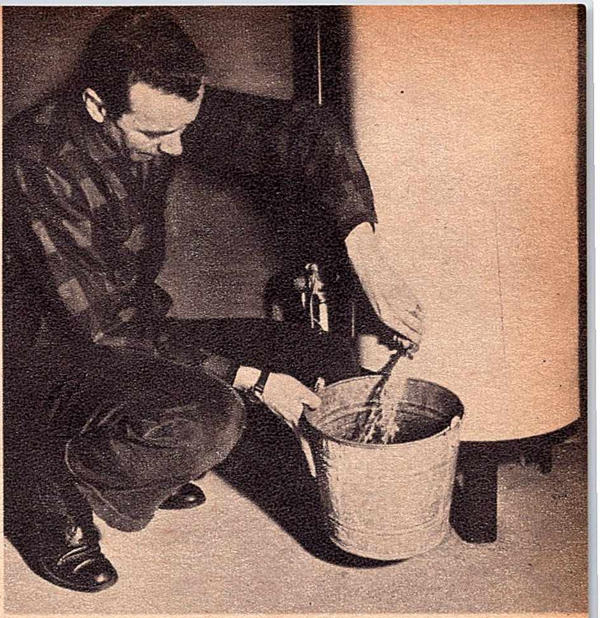


DAMAGED SHINGLES are removed by cutting through the nails with a flathead chisel.

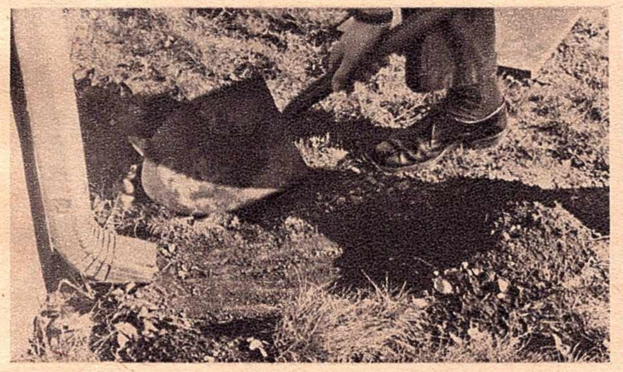
NEW SHINGLE is slid and nailed into place; these shingles are available in one-dozen lots.


LOOK FOR ROT BEHIND WOODEN GUTTERS
REPAIR LOOSE SOFFIT
FROST CAN SEPARATE PATIO ROOF FROM HOUSE
CLEAR CLOGGED DOWNSPOUTS
CHECK FAULTY FLASHING AND LOOSE MORTAR
REPLACE WARPED OR TORN SHINGLES
CALK FLASHING AROUND VENTS
LOOK FOR ROT BEHIND SHUTTERS . . .
REPUTTY WINDOWS WHERE NEEDED
CHECK CEMENT CAP AROUND FLUE
CHECK AND RECALK FLASHING BETWEEN CHIMNEY AND ROOF
HANK CLARK
APPLY PRESERVATIVE TO WOODEN POSTS
CHECK MORTAR SEALS AROUND FAUCET
REPAIR CRACKS IN STUCCO
NSPECT SPLASH PLATE
CHECK FLASHING FOR LIFTING
OIL HARDWARE
LUBRICATE ROLLER RAILS
RECEMENT CRACKS IN GARAGE FLOOR
CALK AT ALL WOOD-BRICK JUNCTURES
POINT BRICK WHERE NEEDED
REPAIR CRACKS IN SETTLING PORCH AND CEMENT WALK
TAMP EARTH TIGHTLY WHEN DIGGING NEAR FOUNDATION
CHECK FOR ROT BEHIND FLOWER BOX
PREPARE FURNACE FOR SUMMER IDLENESS
DOWN-SLOPE GRADE AWAY FROM WALL
FIX ANY OPENINGS AROUND LIGHT FIXTURES
RUSTPROOF METAL WORK

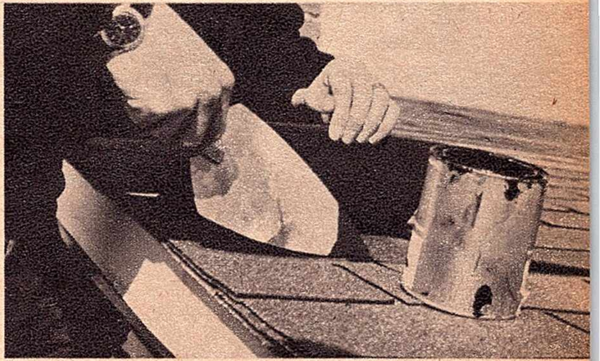
FILL IN low spots around foundation so water can't collect and seep into basement.



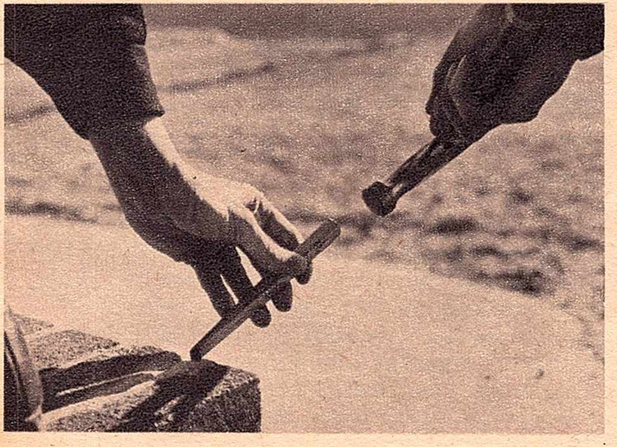
NOW is a good time to drain your hot-water heater of accumulated rusty water.



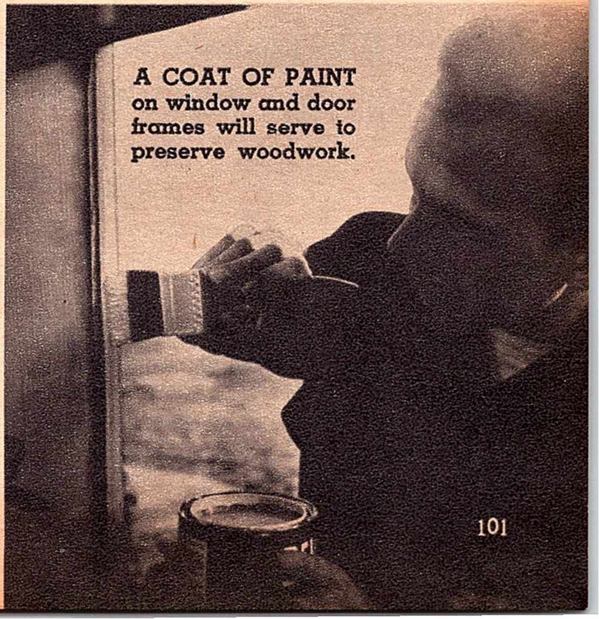
RESET SPLASH BLOCK at foot of drainpipe so water will be diverted away from house.



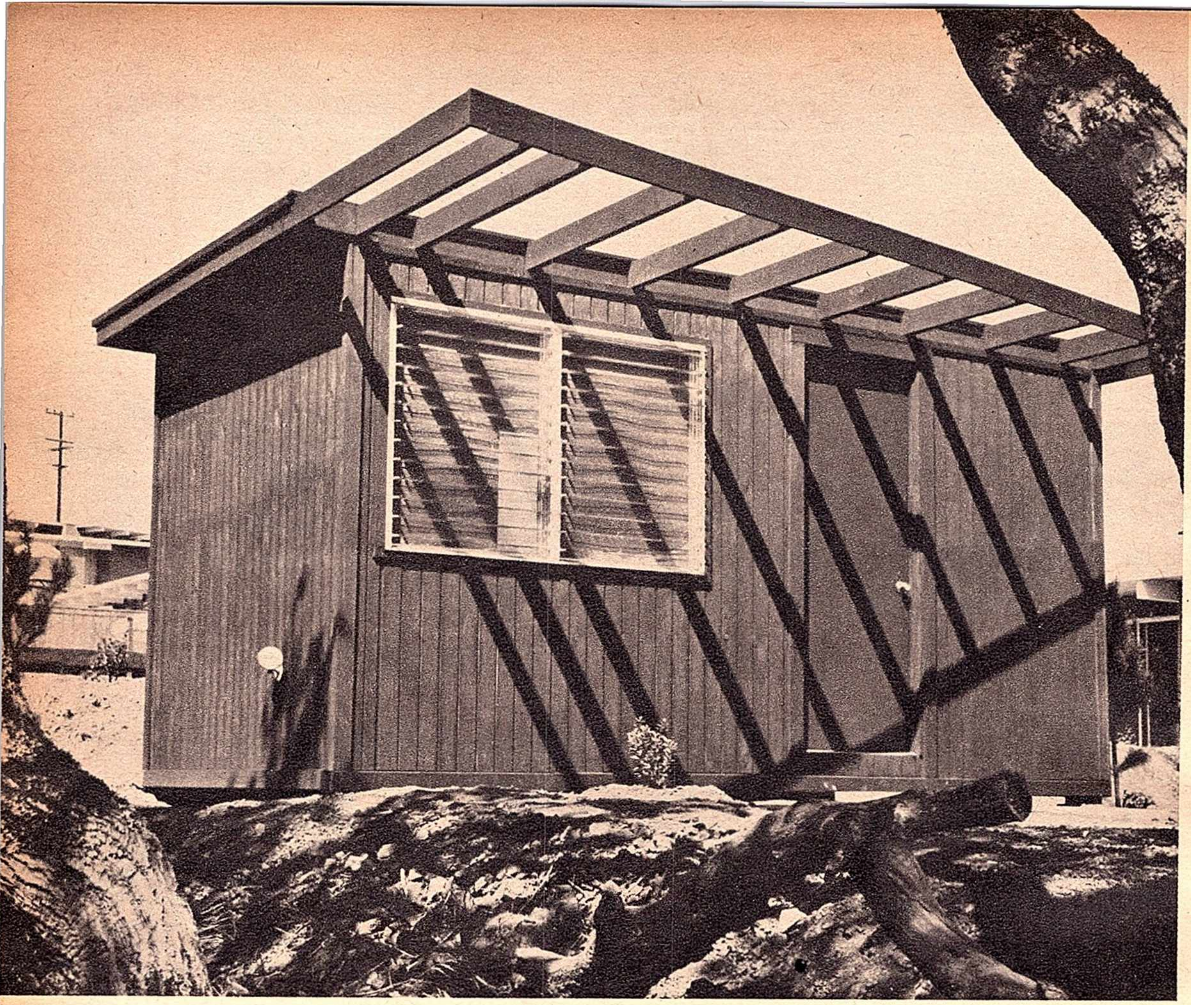
ROOF LEAKING? Take that "stitch in time" by sealing all leaks with roofing compound.



TO REPAIR loose mortar joints, chisel away spolled mortar before repointing.



A COAT OF PAINT on window and door frames will serve to preserve woodwork.



ONE-ROOM CABIN can house guests, a darkroom, workshop, radio shack—you name it.

GUEST CABIN

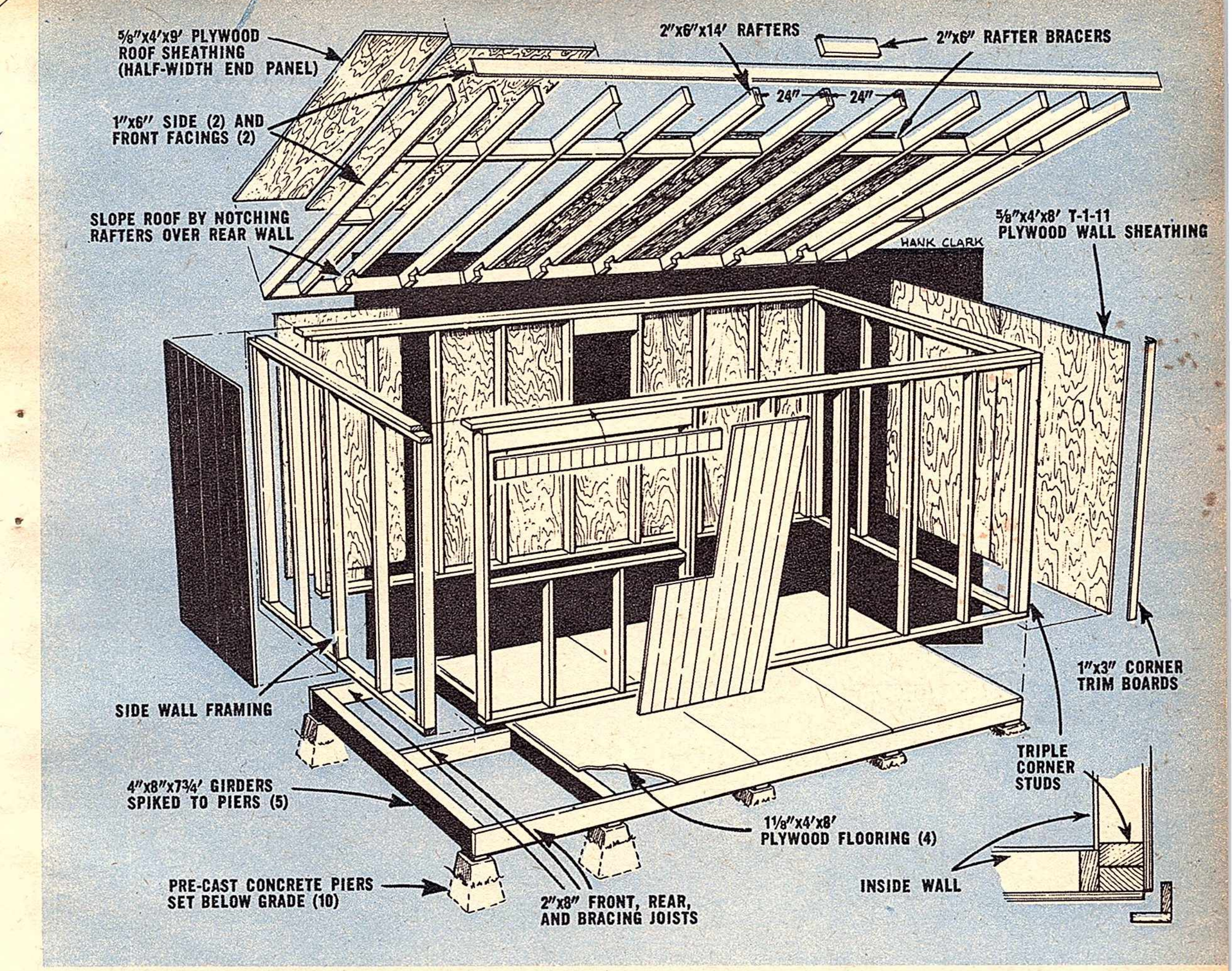
Why not build that "extra room" in the form of a smart little cabin separate from the house?

By Bert Goldrath

THE DESIGN of your home, local building codes and other factors may rule against your adding another room to your house. However, if your lot dimensions are somewhat more than minimal you will be able to solve your space problem by building your "extra room" as a separate cabin apart from the house. An ideal little guest house offering maximum privacy, it can serve alternatively as a den, workshop, radio shack or playhouse for the kids.

Although costs will vary from one locality to another, this particular cabin cost the author only $680, or about $5.00 per square foot including labor and underground electrical wiring. The job was completed in three days with the help of a carpenter.

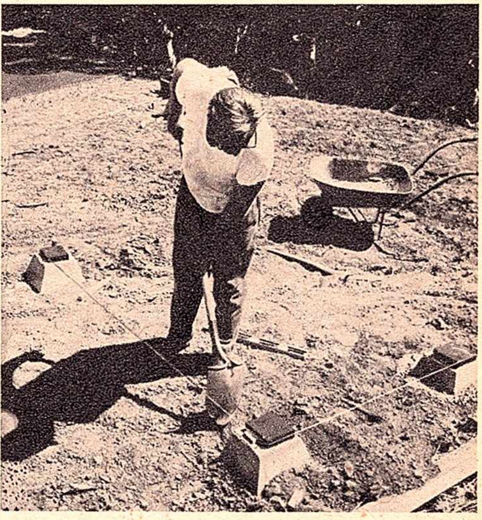
Keep costs down by selecting a stand-


5/8"x4'x9' PLYWOOD ROOF SHEATHING (HALF-WIDTH END PANEL)
2"x6"x14' RAFTERS
2"x6" RAFTER BRACERS
1"x6" SIDE (2) AND FRONT FACINGS (2)
24"
24"
SLOPE ROOF BY NOTCHING RAFTERS OVER REAR WALL
HANK CLARK
5/8"x4'x8' T-1-11 PLYWOOD WALL SHEATHING
1"x3" CORNER TRIM BOARDS
SIDE WALL FRAMING
TRIPLE CORNER STUDS
4"x8"x7¾' GIRDERS SPIKED TO PIERS (5)
1⅛"x4'x8' PLYWOOD FLOORING (4)
INSIDE WALL
PRE-CAST CONCRETE PIERS SET BELOW GRADE (10)
2"x8" FRONT, REAR, AND BRACING JOISTS

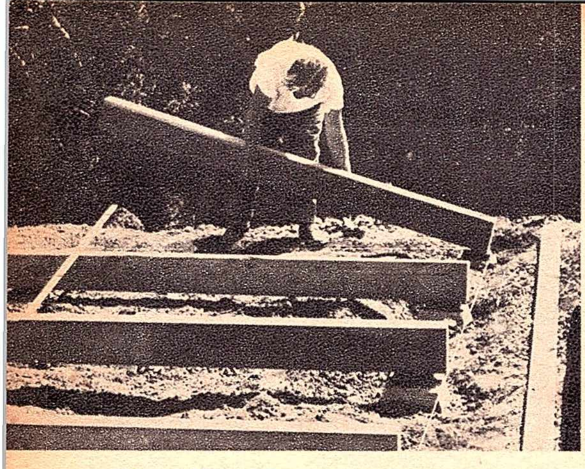
ard, durable building material that can be bought cheaply in quantity. In this case fir plywood was used, not only for exterior and interior walls, but for the roof and floor as well. Note too that the structure—measuring 8x16 feet—is designed to take advantage of standard 4x8-foot plywood panels.

The high cost quoted for a concrete slab foundation dictated the need to build on precast concrete piers. These were set into shallow holes containing four inches of fresh concrete. With the four corner piers squared and leveled, remaining piers were then set in place.

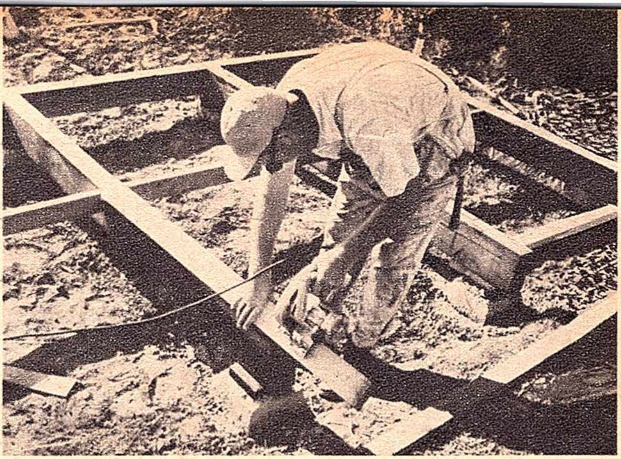
Five 4x8-inch girders were spiked to the piers in parallel rows the width of the building and four feet on center. Then the 2x8-inch blocking was nailed between girder ends on both the 16-foot sides and down the center to provide a grid of four-foot squares over which the



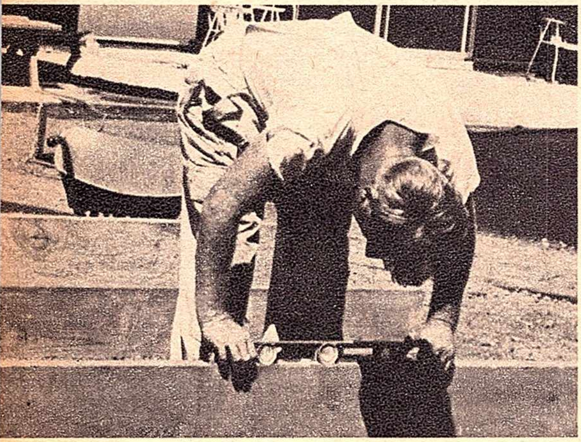
FOUNDATION is of precast concrete piers set in holes containing some fresh concrete.



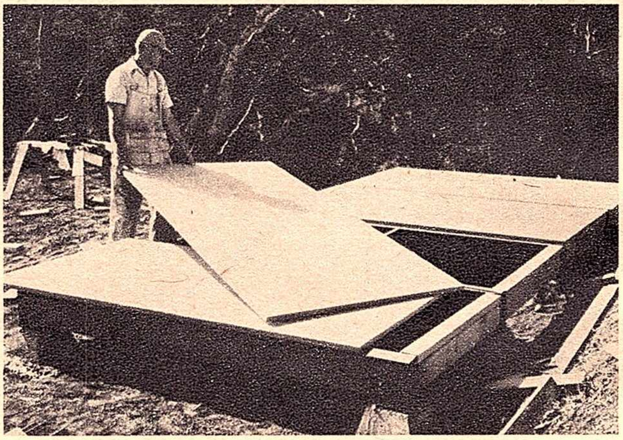
FOUR-BY-EIGHT girders, in four-foot rows, are spiked to blocks precast in the piers.



FLOOR GRID of 2 x 4's (or 2 x 8's) between girders provides a base for the flooring.



GIRDERS must be carefully leveled. If necessary, shim them with shingle wedges.



FOUR 4x8-foot panels are of 1⅛-inch plywood nailed to grid to complete the floor.

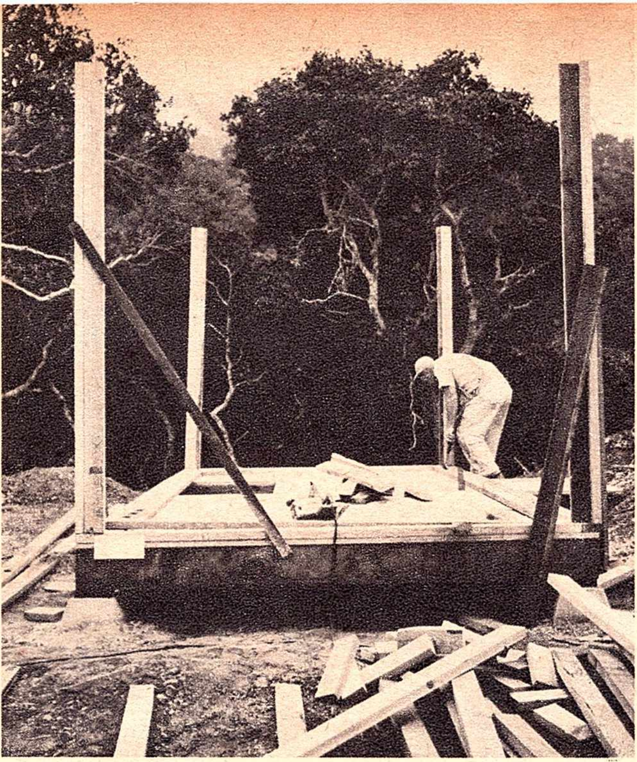
plywood floor is laid. Before nailing down the floor, the understructure was painted with a coat of wood preservative to deter termites and mildew.

Wall framing is conventional with 2x4's placed 24 inches on center instead of the usual 16 inches as in residential construction. Each wall frame may be built as a unit on the deck and then raised into place. Otherwise the corners may be set up first and braced and the walls then framed in place; in this case a 2x4-inch sill is nailed to the floor all around the perimeter. A double top plate of flat 2x4's is required by most local codes. Be sure to use three studs at each corner to give you an inside nailing surface for the wall paneling.

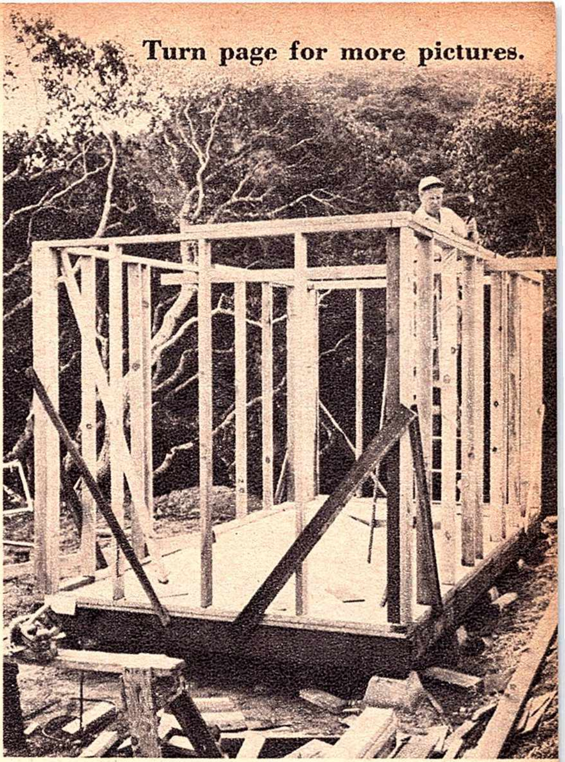
Use two studs at the window and door for the necessary rigidity and structural support. A 2x6-inch header was nailed over the six-foot-wide window to take the weight of the roof off the window frame; and 2x4-inch studs placed beneath the windows help to distribute the load.

Place 2x6-inch rafters two feet on centers across the width of the building. The overhang provided for in this instance is one foot on either end and at the rear, and five feet at the front; the 2x6 rafters are thus 14 feet long. To slope the roof, notch the rafters to a depth of two or three inches where they rest on the top plate along the rear side. To frame for the overhang on the ends, spike 2x6's at right angles to the rafters from inside the [*Continued on page* 136]

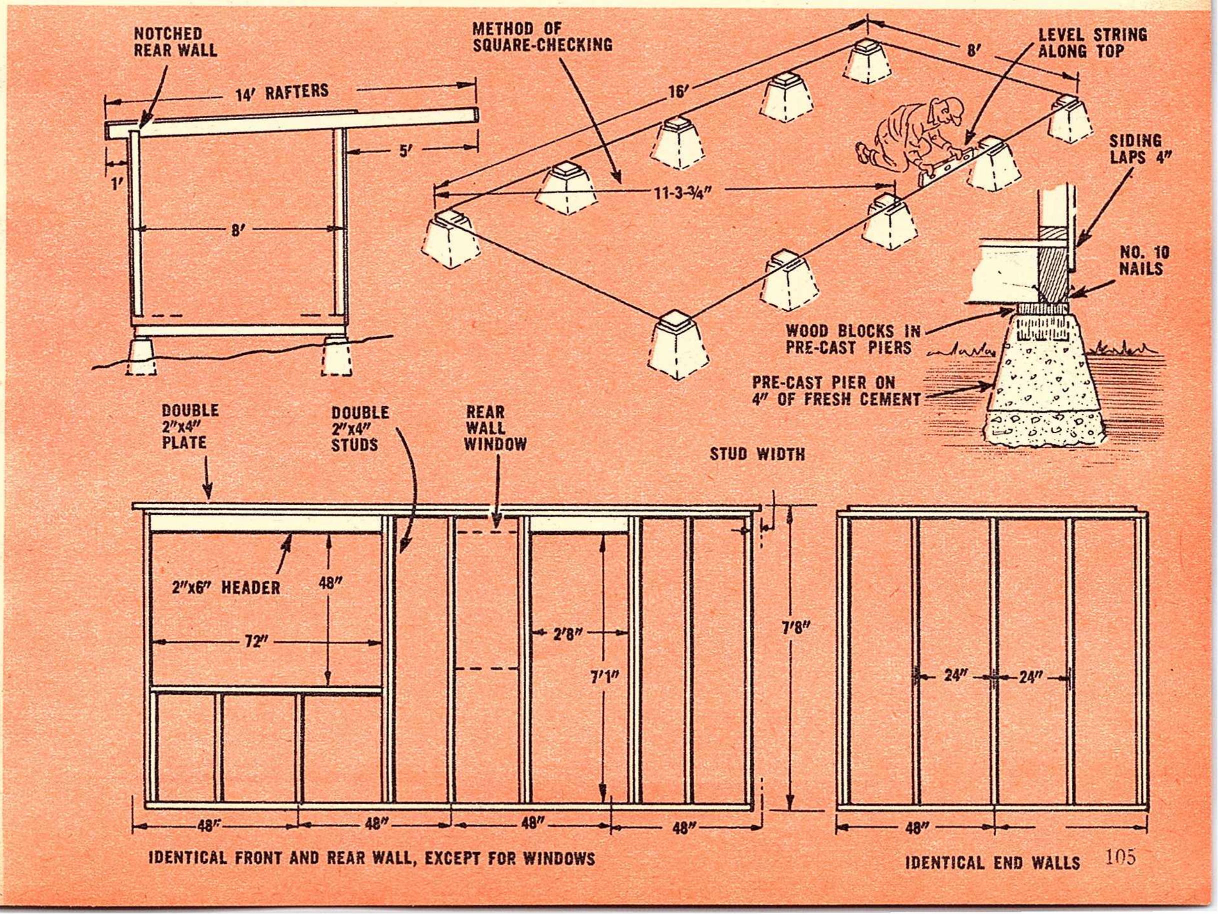
Turn page for more pictures.



ERECT triple studs at each corner following the installation of the 2x4-inch sill.

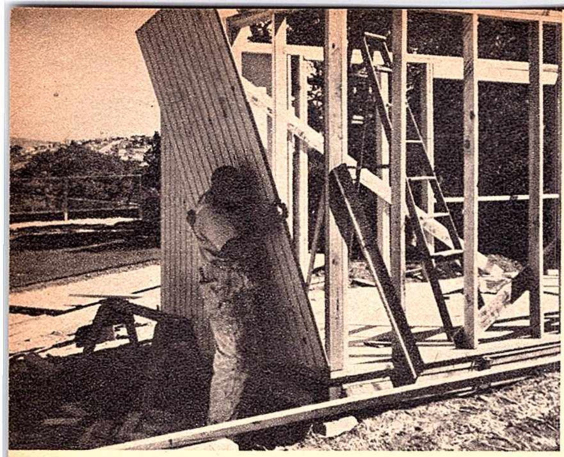


FOUR WALLS go up in a few hours, then are topped with a double plate of 2 x 4's.

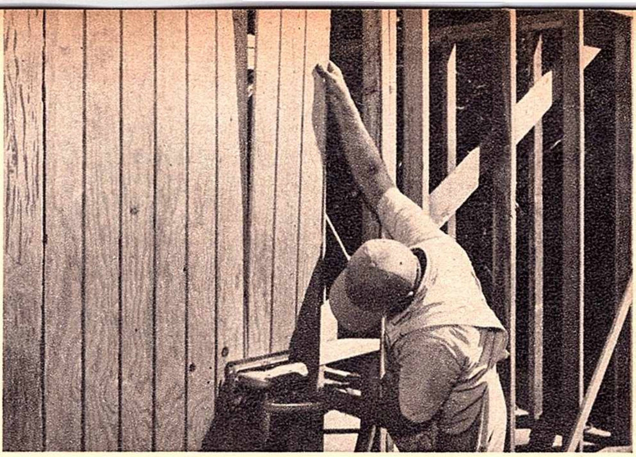

NOTCHED REAR WALL
14' RAFTERS
5'
1'
8'
METHOD OF SQUARE-CHECKING
16'
8'
LEVEL STRING ALONG TOP
11-3-3/4"
SIDING LAPS 4"
NO. 10 NAILS
WOOD BLOCKS IN PRE-CAST PIERS
PRE-CAST PIER ON 4" OF FRESH CEMENT
DOUBLE 2"x4" PLATE
DOUBLE 2"x4" STUDS
REAR WALL WINDOW
STUD WIDTH
2"x6" HEADER
48"
72"
2'8"
7'1"
7'8"
24"
24"
48"
48"
48"
48"
48"

IDENTICAL FRONT AND REAR WALL, EXCEPT FOR WINDOWS

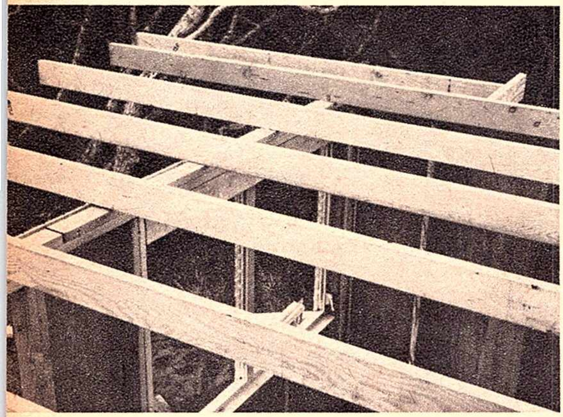
IDENTICAL END WALLS



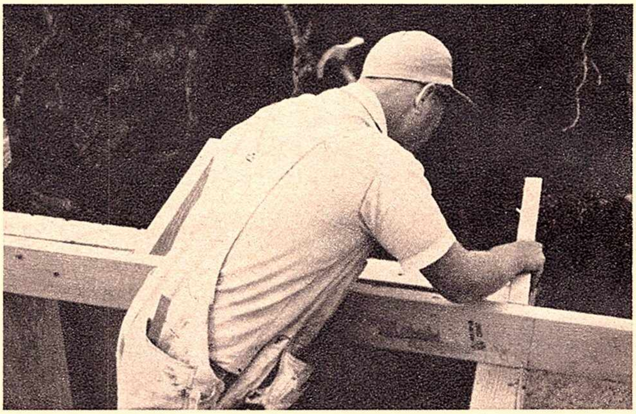
IT'S PLANNED on a four-foot module, so cabin's plywood panels need no trimming.



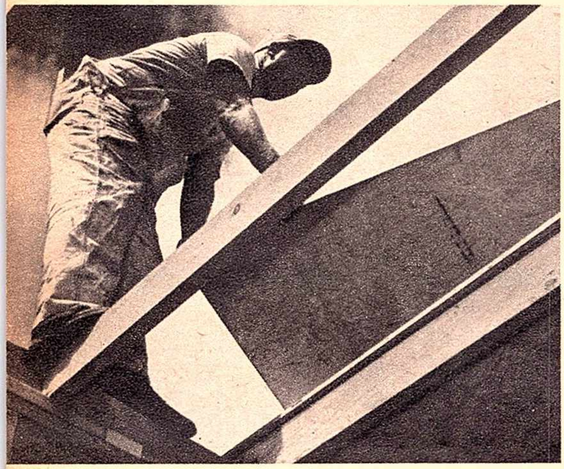
PORTABLE electric saw makes quick work of cutting out the two window openings.



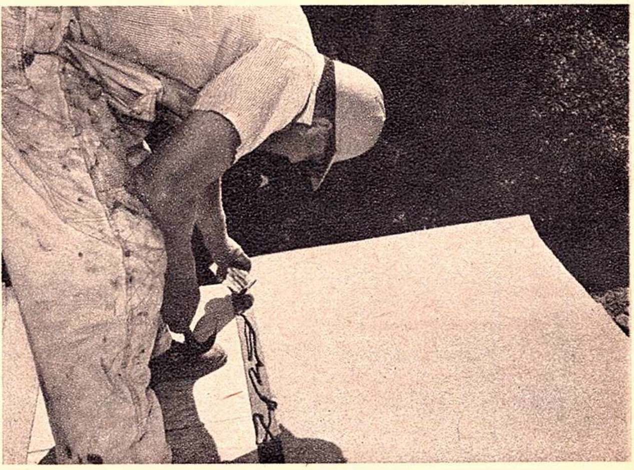
TOP VIEW of cabin shows overhang of the 2 x 6-inch rafters on their 24-inch centers.



SHORT 2 x 6's are framed in for the overhang extending over each end of the cabin.



ROOFING PANELS are of ⅝-inch plywood and fit exactly in place over the rafters.



SEALING COMPOUND waterproofs the lap joints between strips of roofing material.

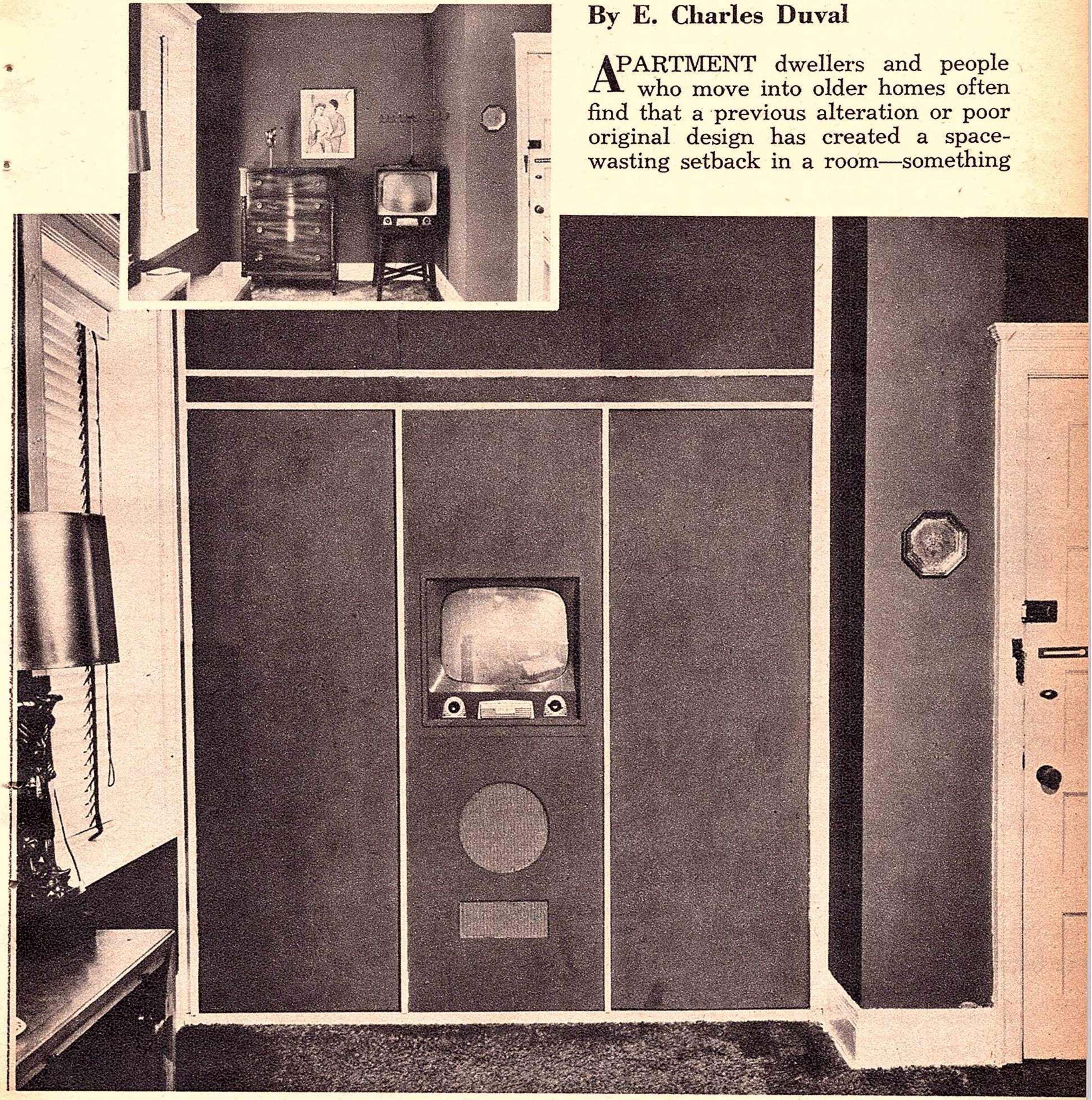
SPRUCE UP YOUR HOME

Space-making CLOSET

Built into a setback, this closet makes use of waste space for storage and creates living space elsewhere.

By E. Charles Duval

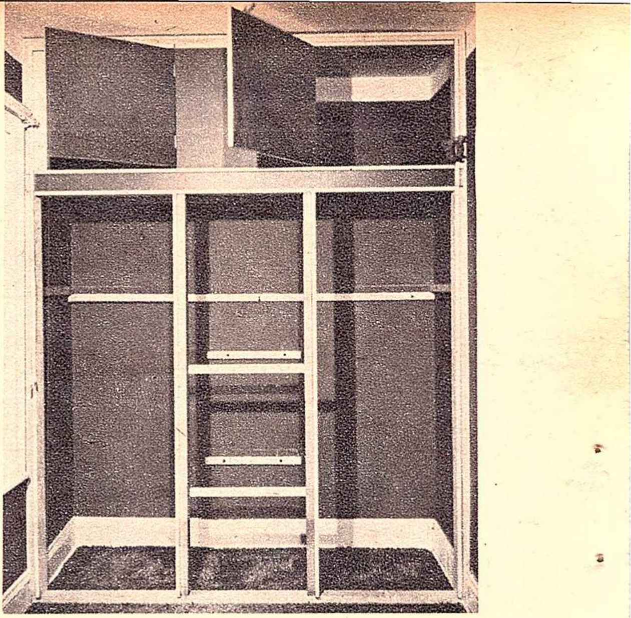
APARTMENT dwellers and people who move into older homes often find that a previous alteration or poor original design has created a space-wasting setback in a room—something



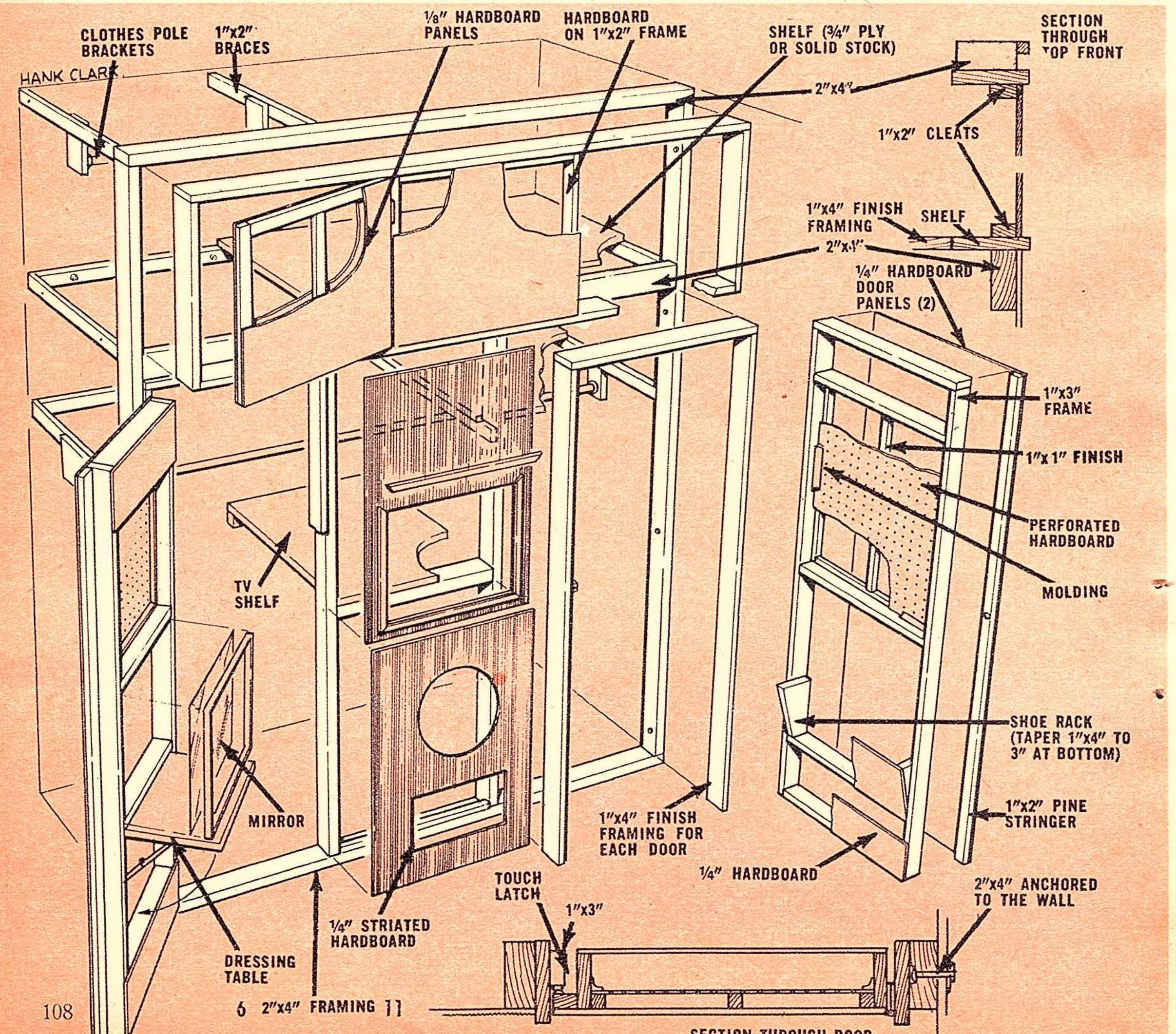
BEFORE AND AFTER views show waste space fully utilized with a closet installation.

that doesn't lend itself to functional arrangement of furniture and generally becomes an unattractive catch-all for odd pieces. Such was the case in the apartment of a young Chicago couple who came up with a space-making solution.

In this apartment, the bedroom was too small to hold a complete set of bedroom furniture, so the chest of drawers had to go into the living room setback. There, it and a television set stuck out like sore thumbs. The solution was to remove an inadequate bedroom closet



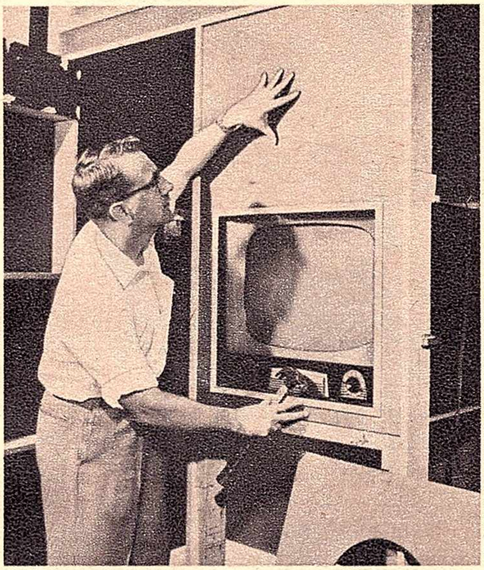
CLOSET is framed with 2x4's cut in living room. Note center cleats for TV shelf.


CLOTHES POLE BRACKETS
1"x2" BRACES
HANK CLARK
1/8" HARDBOARD PANELS
HARDBOARD ON 1"x2" FRAME
SHELF (3/4" PLY OR SOLID STOCK)
SECTION THROUGH TOP FRONT
2"x4"
1"x2" CLEATS
1"x4" FINISH FRAMING
SHELF
2"x4"
1/4" HARDBOARD DOOR PANELS (2)
1"x3" FRAME
1"x1" FINISH
PERFORATED HARDBOARD
MOLDING
TV SHELF
SHOE RACK (TAPER 1"x4" TO 3" AT BOTTOM)
1"x2" PINE STRINGER
MIRROR
1"x4" FINISH FRAMING FOR EACH DOOR
1/4" HARDBOARD
TOUCH LATCH
1"x3"
2"x4" ANCHORED TO THE WALL
1/4" STRIATED HARDBOARD
DRESSING TABLE
6 2"x4" FRAMING 11
SECTION THROUGH DOOR

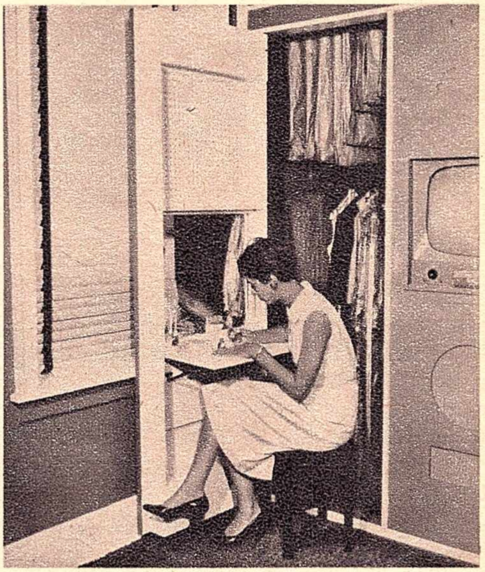
TOP CLOSET DOORS are ⅛-in. tempered hardboard nailed to 1x2-in. pine framing.

and build a floor-to-ceiling closet in the living room setback. Thus the bedroom was enlarged, allowing ample space for a complete bedroom set, and the new closet not only housed the television set but provided more storage space than had been available before.

So, if you have a setback that throws a room out of proportion and also wastes space, the drawing and photographs show the simple method by which you can put things right. ●

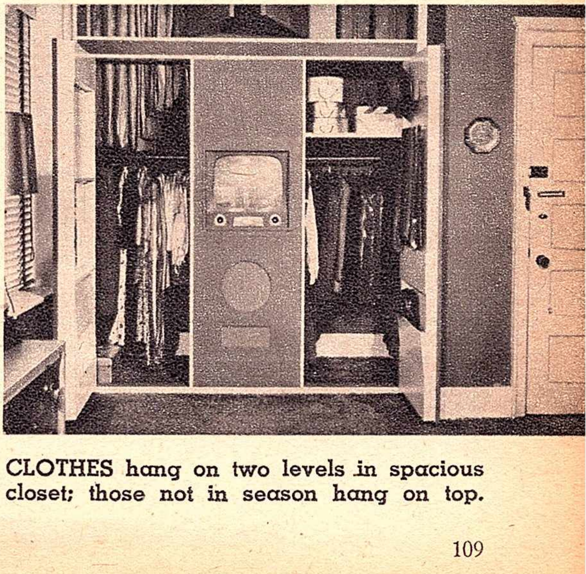


CENTER PANELING is striated hardboard. TV is bordered by ¾-in. screen molding.



DRESSING TABLE on inside of left door is hinged to hang flush when not in use.

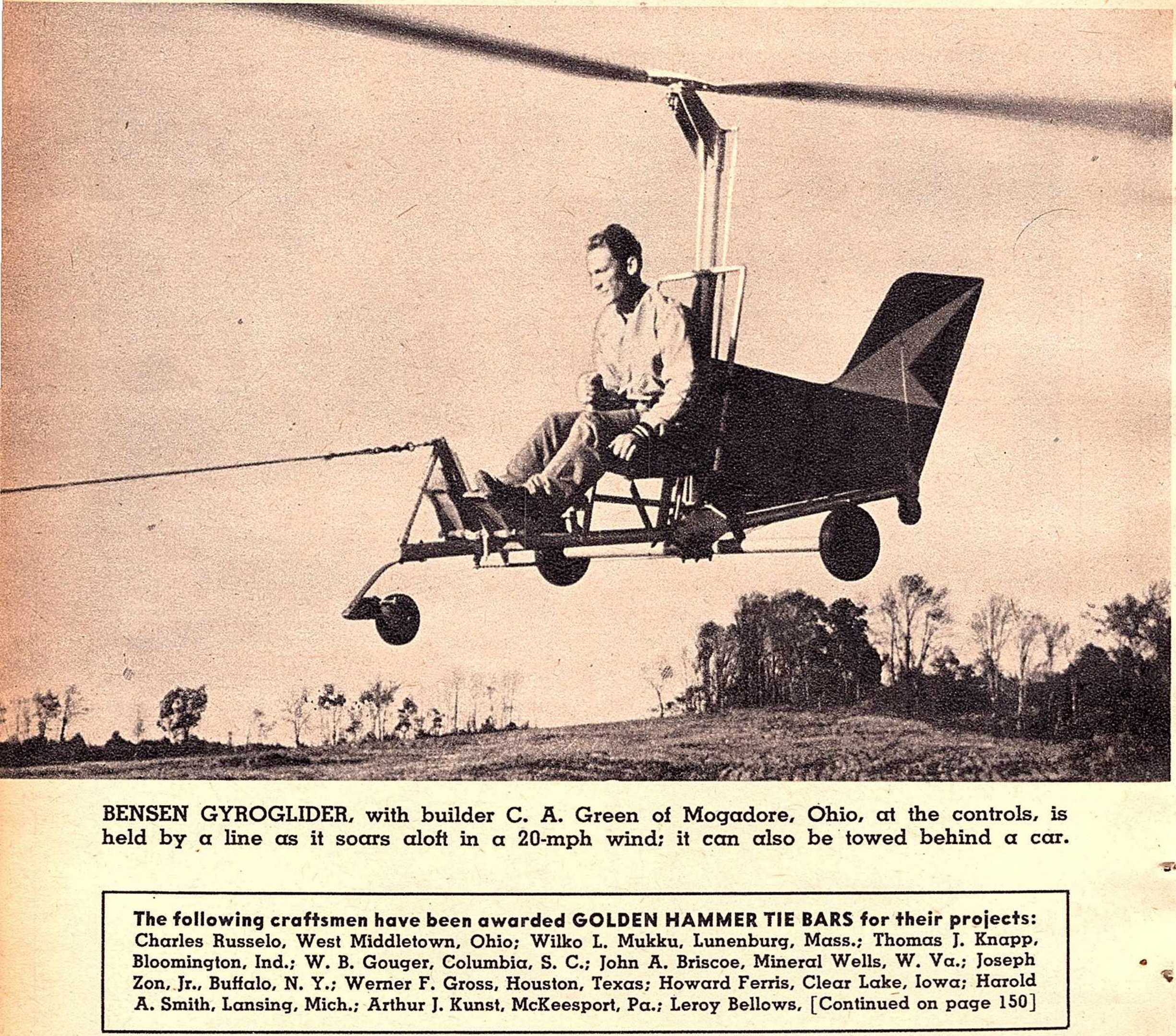
BUTT HINGES support upper doors; piano hinges carry heavier load on lower doors.



CLOTHES hang on two levels in spacious closet; those not in season hang on top.

Golden Hammer Award Winners

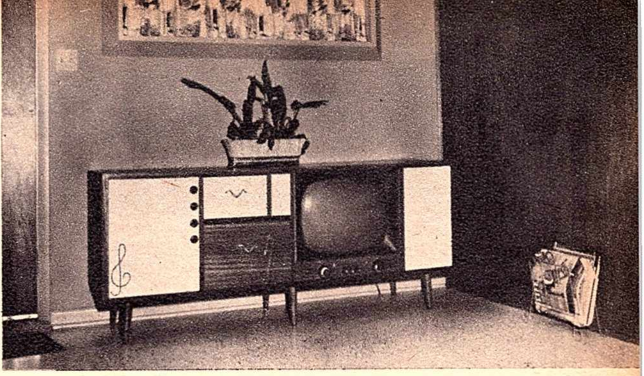
MECHANIX ILLUSTRATED
GOLDEN HAMMER



BENSEN GYROGLIDER, with builder C. A. Green of Mogadore, Ohio, at the controls, is held by a line as it soars aloft in a 20-mph wind; it can also be towed behind a car.

The following craftsmen have been awarded GOLDEN HAMMER TIE BARS for their projects: Charles Russelo, West Middletown, Ohio; Wilko L. Mukku, Lunenburg, Mass.; Thomas J. Knapp, Bloomington, Ind.; W. B. Gouger, Columbia, S. C.; John A. Briscoe, Mineral Wells, W. Va.; Joseph Zon, Jr., Buffalo, N. Y.; Werner F. Gross, Houston, Texas; Howard Ferris, Clear Lake, Iowa; Harold A. Smith, Lansing, Mich.; Arthur J. Kunst, McKeesport, Pa.; Leroy Bellows, [Continued on page 150]

Each craftsman whose project is shown receives a 24-karat gold-plated Hammer and a Workbench Award Certificate. Runners-up will be sent a beautiful gold-plated Golden Hammer Tie Bar or MI's Certificate of Merit. How about sending us a *black-and-white* photo and *full* description of your latest project? Photos of you and your workshop are also eligible. Send all entries, with return postage enclosed, to MECHANIX ILLUSTRATED Golden Hammer Awards, 67 West 44th St., New York 36, N. Y. Entrants are advised that MECHANIX ILLUSTRATED cannot accept responsibility for customs charges, duties, taxes, etc., levied against Golden Hammer and Golden Hammer Tie Bar winners outside the United States.



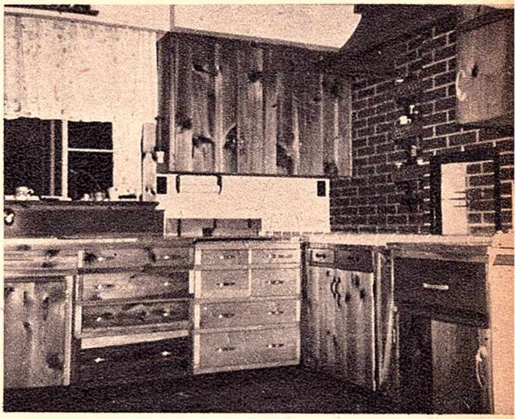
MIDGET RACER, made from MI plans by Eugene Cicero, Bronx, N. Y., has Fiberglas body and is powered by a 1-hp Briggs & Stratton engine geared down to 12 mph.

TV-RADIO-STEREO UNIT was designed and built by Mr. and Mrs. Robert Wirges, N. Little Rock, Ark., who also planned and finished the modern room housing the set.

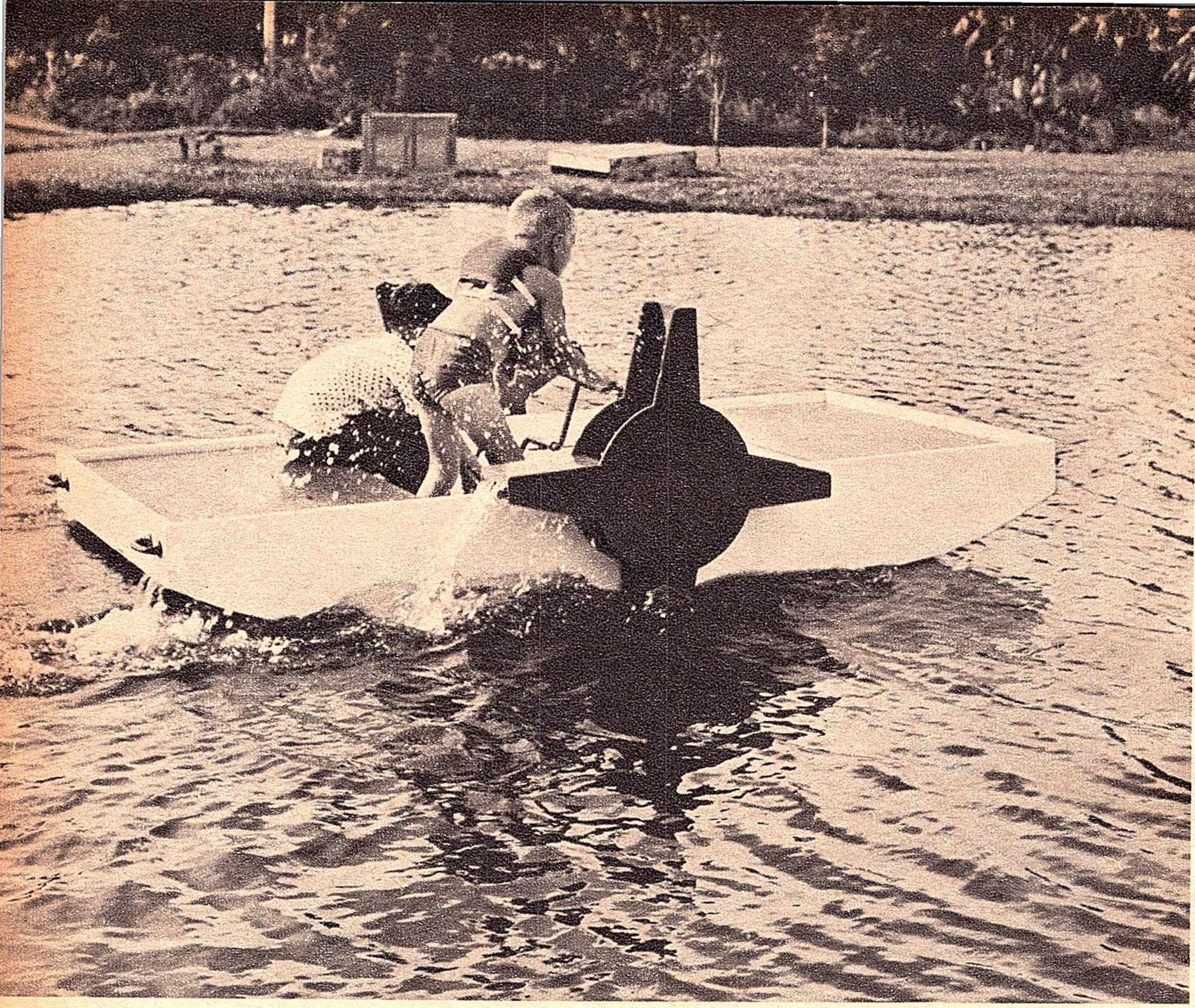
ROCK MAPLE cobbler's bench—and the lamp, too—were created by Edward McKenna, Trenton, N. J.

WELSH CABINET of ponderosa pine was built by Paul Hancik, Keyport, N. J., who copied it from pictures.

CABIN CRUISER cost S. L. Howell of Columbia, S. C., about $4,500 to build; his three-year project is 27½ feet long, sleeps four, does 18 knots.



KITCHEN CABINETS of knotty white pine now beautify the kitchen of John Bishop, Lenoir, N. C., who made them.



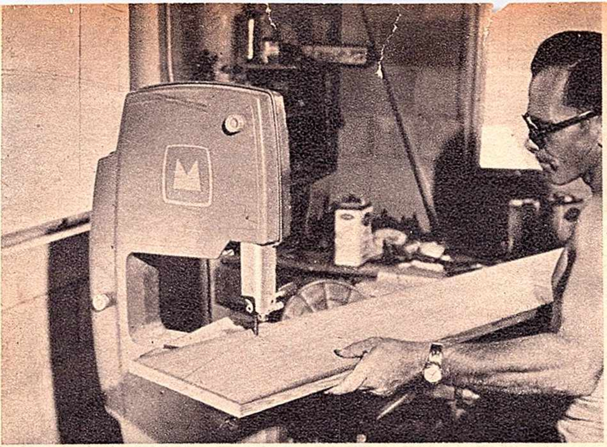
Paddle Wheel Boat

Here's a boat that's a barrel of fun for the kids and you can build it for less than $35.

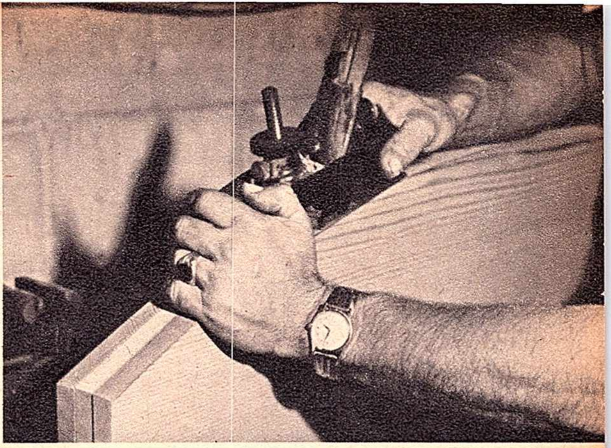
By Hal Kelly

BUILDING this boat will really put you in solid with the small fry—*if* you will give them a chance to play with it when it's finished. And the job takes no more than a weekend for anyone who can cut wood along a line. You don't even need power tools, though they're great for doing a fast job.

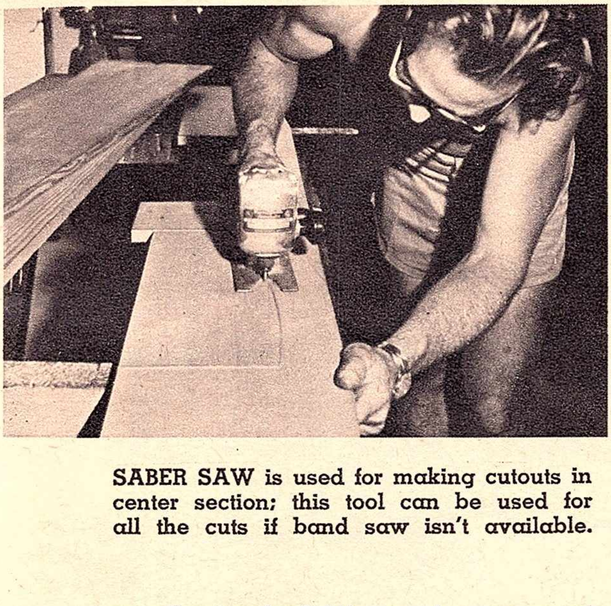
When it comes to moving the boat, Junior needs only a few minutes of practice before he's in complete control. A four-year-old can do it and my own six-year-old can make her go faster than an adult can row a boat. There's no front or back—she goes just as well in either direction—and she'll spin around



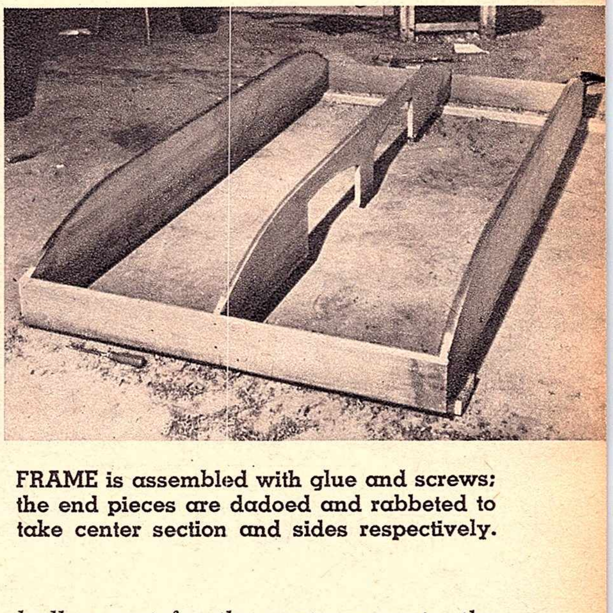
SIDES and center piece have same curves but are cut separately; it's too awkward to join the three and cut them together.



WHEN CUT, the three are joined temporarily and planed to equal shape; check with square to be sure sides are 90° to edges.



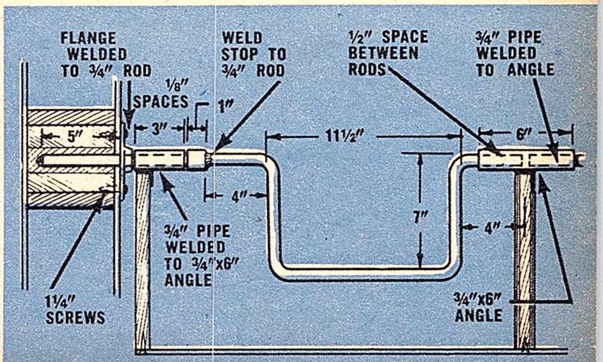
SABER SAW is used for making cutouts in center section; this tool can be used for all the cuts if band saw isn't available.



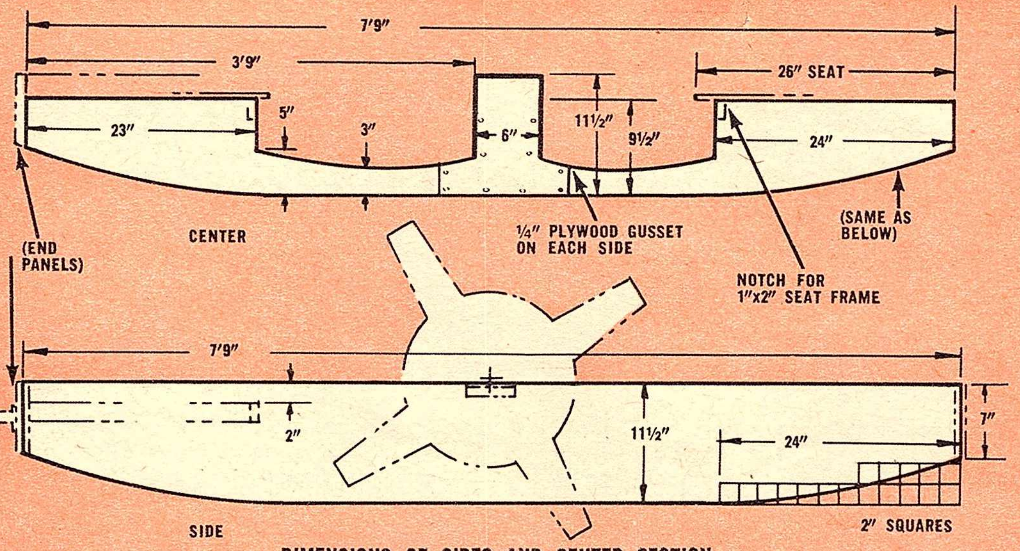
FRAME is assembled with glue and screws; the end pieces are dadoed and rabbeted to take center section and sides respectively.

on a floating leaf if the cranks are turned in opposite directions. It's great fun and a safe boat, too.

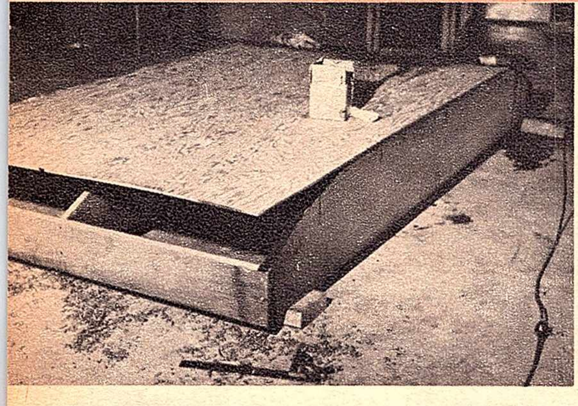
No jig is necessary for construction. The sides and center section are cut to the dimensions shown and, since they have the same bottom curve, are clamped together for planing. They must match exactly on the underside, with the edges square to the sides, so that the bottom will lie flush on all three. When this is done, the end pieces are cut to size and then dadoed at the center and rabbeted at the ends to half their depth. Then the whole frame can be assembled with waterproof glue and 1¼-inch, No. 8 screws. Addition of an exterior plywood bottom completes the hull except for the center gussets, the seat framing and the seats. Before adding the seats, apply one coat of white Firzite and two coats of exterior enamel.



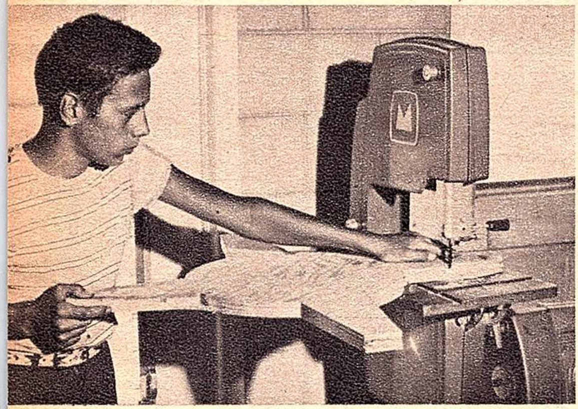
FORM AND INSTALLATION OF CRANK


7'9"
3'9"
26" SEAT
23"
5"
3"
6"
11½"
9½"
24"
CENTER
(END PANELS)
¼" PLYWOOD GUSSET ON EACH SIDE
(SAME AS BELOW)
NOTCH FOR 1"x2" SEAT FRAME
7'9"
2"
11½"
24"
7"
SIDE
2" SQUARES

DIMENSIONS OF SIDES AND CENTER SECTION



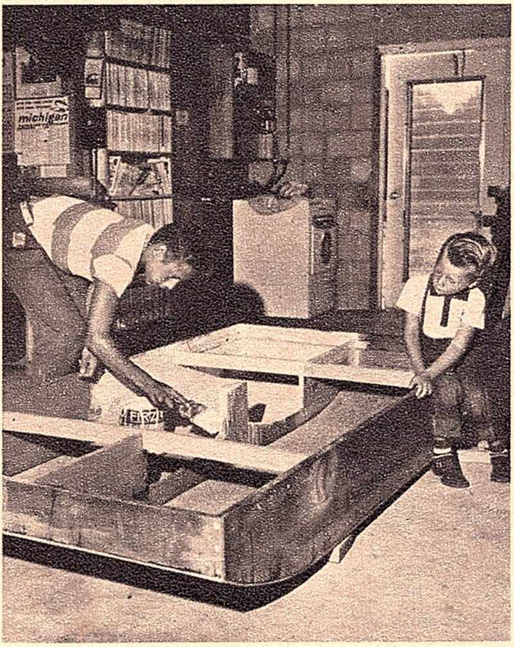
BOTTOM is ¼-in. plywood which is glued and screwed down, starting at the center and working alternately toward each end.



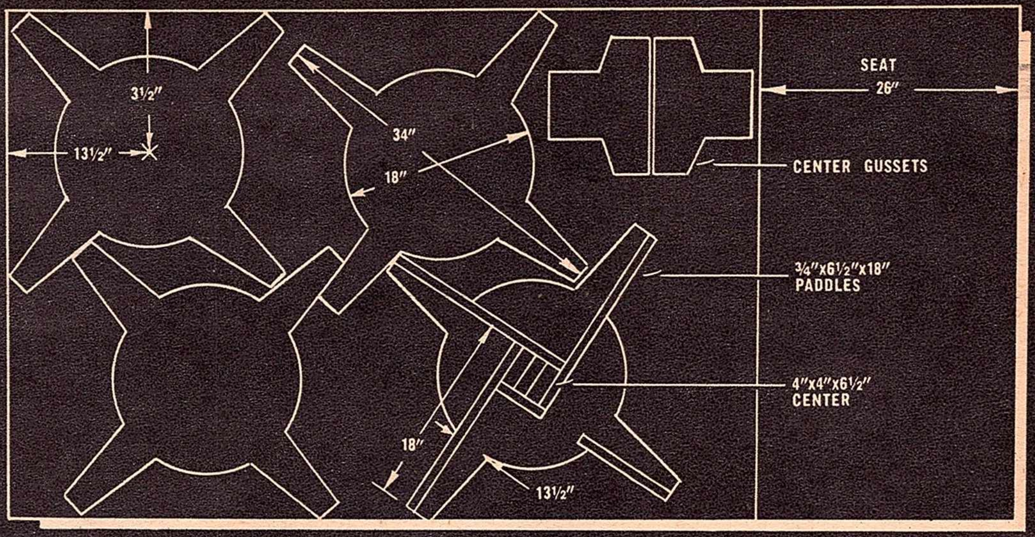
PADDLE WHEEL sides can be cut with a band saw in one operation if four pieces of ¼-in. exterior plywood are sandwiched.

LARGE-SCALE PLANS

are available. Send $2.00 to MI Plans Service, Fawcett Building, Greenwich, Conn. To speed handling, please specify Plan No. B-241, Paddle Wheel Boat.



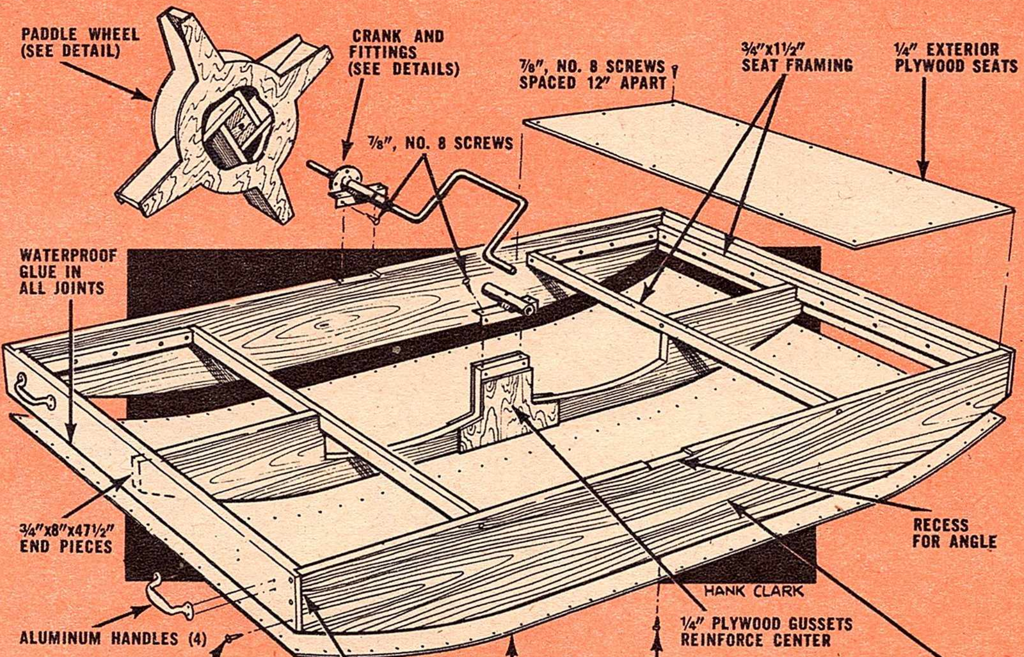
PAINT JOB is begun before seats are in place. All woodwork gets a coat of white Firzite and two coats of exterior enamel.


3½″
13½″
34″
18″
SEAT
26″
CENTER GUSSETS
¾″x6½″x18″
PADDLES
4″x4″x6½″
CENTER
18″
13½″

PARTS FROM ONE ¼″x4′x8′ EXTERIOR PLYWOOD SHEET

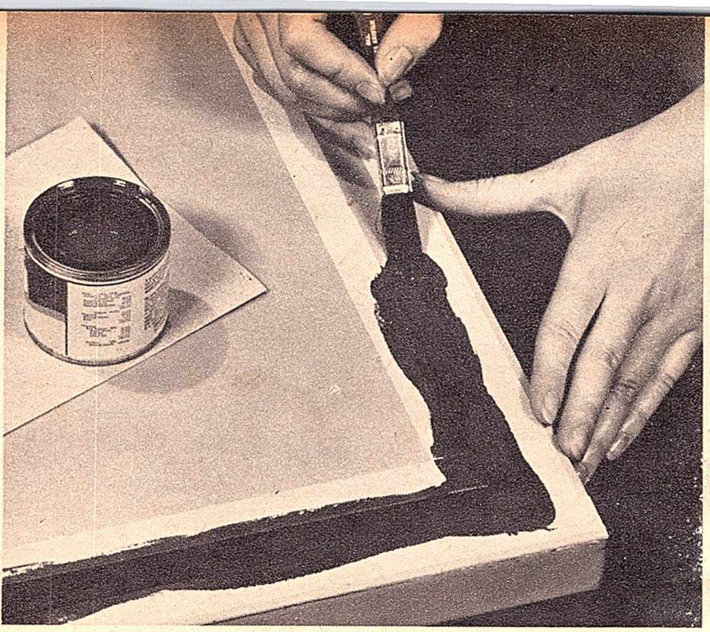
The paddles are easily constructed of ¼-inch exterior plywood and solid stock. They're assembled with glue and ¾-inch, No. 16 Anchorfast nails and painted in the same manner as the hull. Ours are bright red to match the seats and contrast nicely with a white hull.

The best approach to building the cranks is to have the local metal shop make them up. They'll have the angle iron and ¾-inch metal rod in stock. When the [*Continued on page* 152]

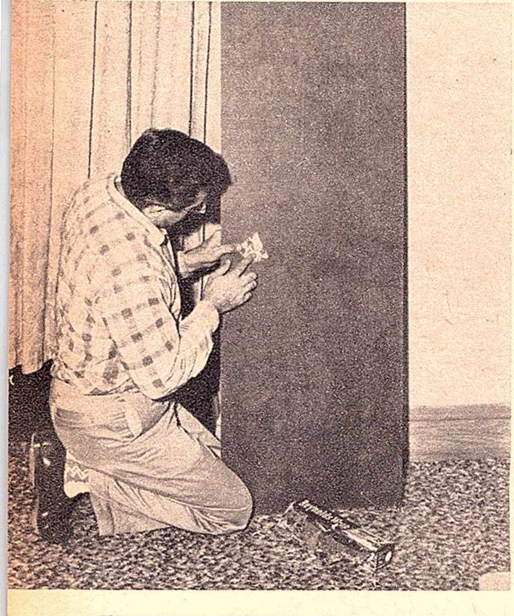

PADDLE WHEEL
(SEE DETAIL)
CRANK AND
FITTINGS
(SEE DETAILS)
⅞″, NO. 8 SCREWS
SPACED 12″ APART
¾″x1½″
SEAT FRAMING
¼″ EXTERIOR
PLYWOOD SEATS
⅞″, NO. 8 SCREWS
WATERPROOF
GLUE IN
ALL JOINTS
¾″x8″x47½″
END PIECES
RECESS
FOR ANGLE
HANK CLARK
ALUMINUM HANDLES (4)
¼″ PLYWOOD GUSSETS
REINFORCE CENTER
1¼″, NO. 8 SCREWS
⅜″x¾″ RABBET
AT CORNERS
¼″x4′x8′ EXT.
PLYWOOD BOTTOM
⅞″, NO. 8 SCREWS
SPACED 3″ APART
¾″ CEDAR, SPRUCE
OR MAHOGANY
SIDES AND FRAMING

PERSPECTIVE OF HULL, PADDLE WHEEL AND CRANK ASSEMBLY

HOME And SHOP TIPS



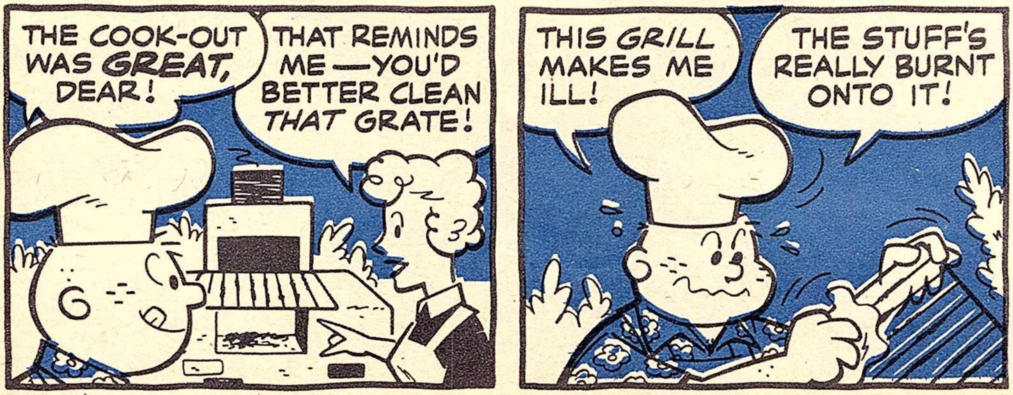
TWO STRIPS of tape, parallel to each other, make a guide for painting straight borders. Remove the tape while the paint is still wet.

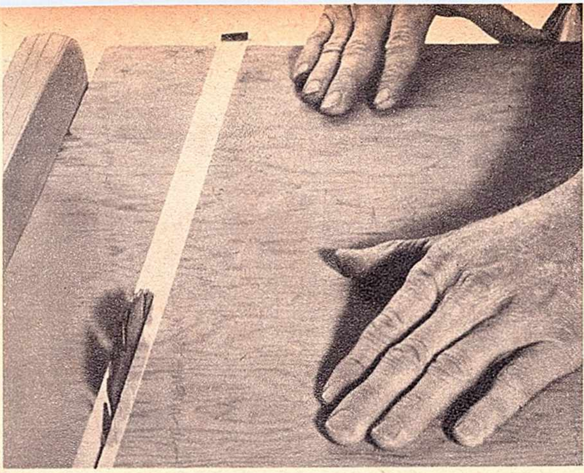


SCRATCH on the back of a mirror will not be visible from the front if you smooth aluminum foil over the area and secure it with shellac.

Send Freddie Fumbles your idea of a good short-cut, time-saver or safety device in your work, whether it be in the home, shop, office or farm. Each tip accepted will be paid for at the rate of $10. Naturally we cannot acknowledge or return the ones we cannot use. However all will be carefully read and evaluated. (Those which we can use in other departments of MI will be paid for at our regular rates.) Please send in your ideas on a post card only. Address to Freddie Fumbles, *Mechanix Illustrated*, 67 W. 44th St., New York 36, New York.

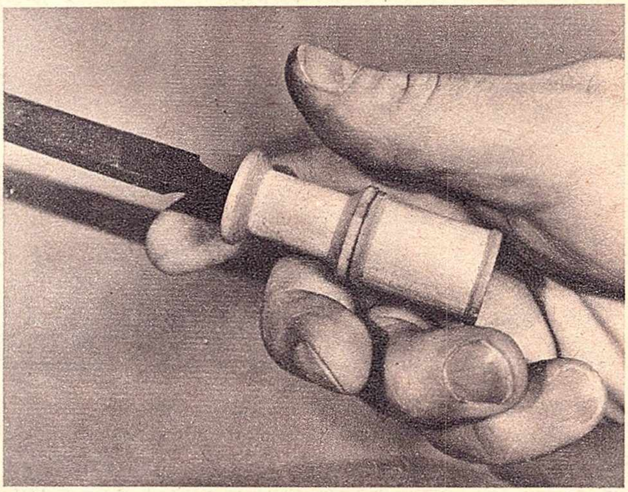
FREDDIE FUMBLES


THE COOK-OUT WAS GREAT, DEAR!
THAT REMINDS ME—YOU'D BETTER CLEAN THAT GRATE!
THIS GRILL MAKES ME ILL!
THE STUFF'S REALLY BURNT ONTO IT!

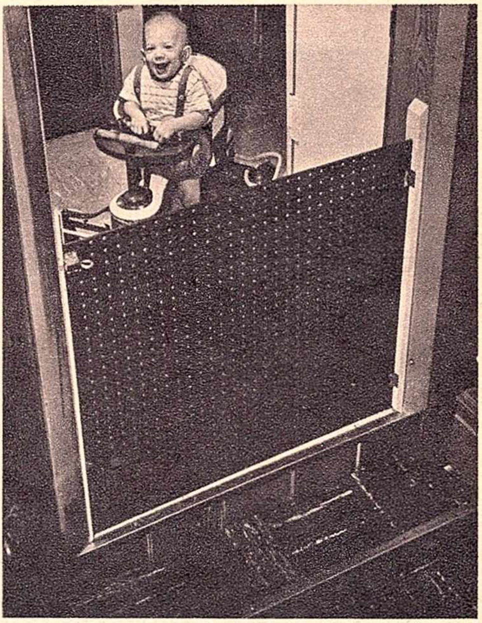


WHEN SAWING plywood across the grain, you can prevent splintering by applying a strip of masking tape on the cutting line.

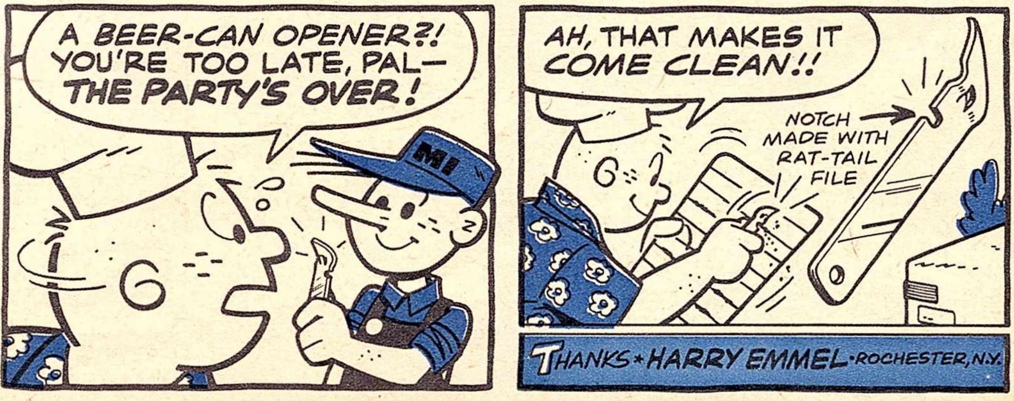
PROP for soldering iron is easily made from a piece of bendable wire.



FILE HANDLE is easily made from a pair of empty spools if a regular handle isn't available; one spool does for small file.



PEG-BOARD dutch door keeps a youngster from falling down stairs and allows child to see through; latch goes on stair side.

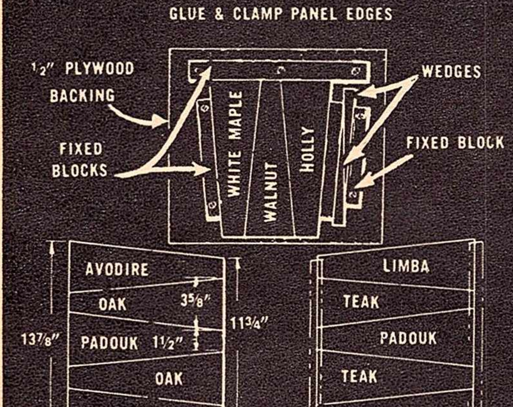

A BEER-CAN OPENER?! YOU'RE TOO LATE, PAL— THE PARTY'S OVER!
MI
AH, THAT MAKES IT COME CLEAN!!
NOTCH MADE WITH RAT-TAIL FILE
THANKS • HARRY EMMEL • ROCHESTER, N.Y.

RARE WOODS WASTEBASKET

Hardy construction, simple lines, ample dimensions and grainy woods lend to this project a regal elegance.

By Clarence A. Martin

WORLDY WOODS, craftsmanship give this wastebasket the look of fine furniture.


GLUE & CLAMP PANEL EDGES
½" PLYWOOD BACKING
FIXED BLOCKS
WEDGES
FIXED BLOCK
WHITE MAPLE
WALNUT
HOLLY
AVODIRE
OAK
3⅝"
PADOUK
1½"
OAK
AVODIRE
13⅞"
11¾"
6⅝"
LIMBA
TEAK
PADOUK
TEAK
LIMBA
¾" RAILS
MAHOGANY
ROSEWOOD
CHERRY
8¾"

WOODS from such exotic lands as Africa, Brazil, India and Honduras were joined with others from the United States to create this beautiful combination wastebasket and magazine rack. It's made of eleven different woods ranging in color from the ivory white of holly to the dark brown of rosewood.*

Start construction by setting your radial saw arm at 5° and cut the eleven half-inch-thick varieties of wood in the shape of wedges 11 inches long, 3⅝ inches wide at the top, and 1½ inches wide at the bottom. If a circular saw is used, a jig of ¾-inch-taper-per-foot will cut one side, and 1½-inch-taper-per-foot the other.

Now select for the basket—among the extra wedges left over as a result of

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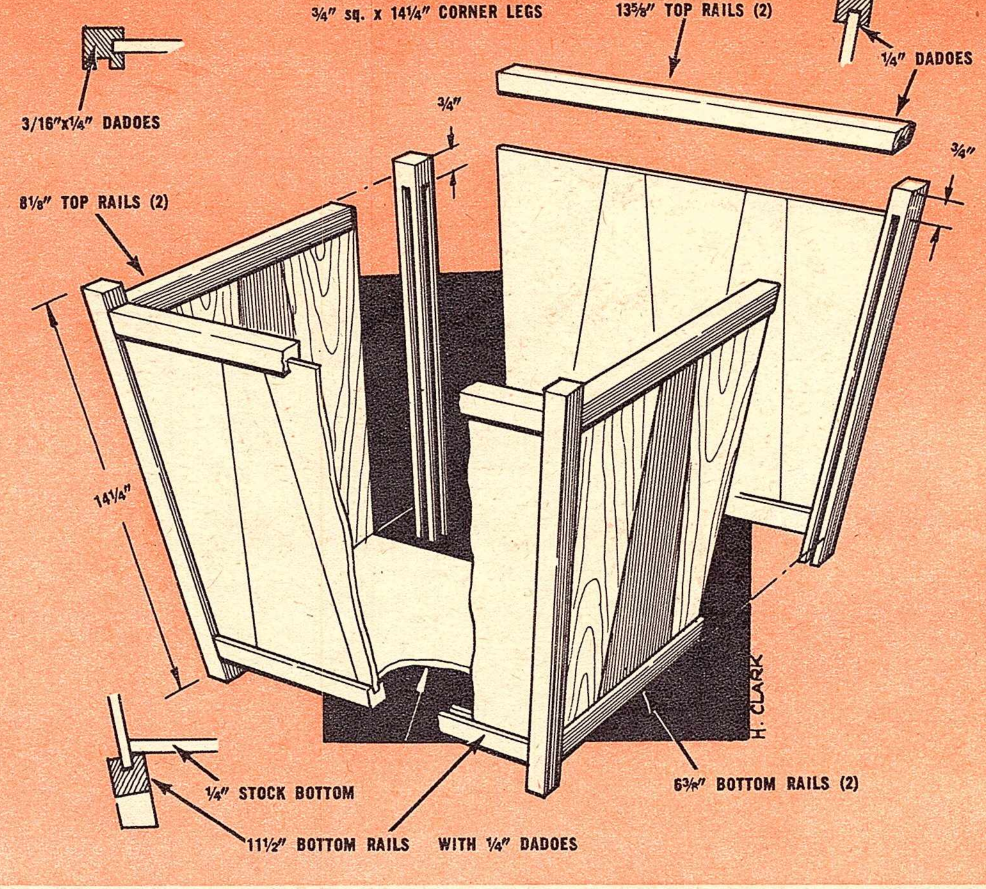
*The various woods for this project are available from Albert Constantine & Son, Inc., 2050 Eastchester Rd., New York 61, N. Y. See end of article for list of materials.

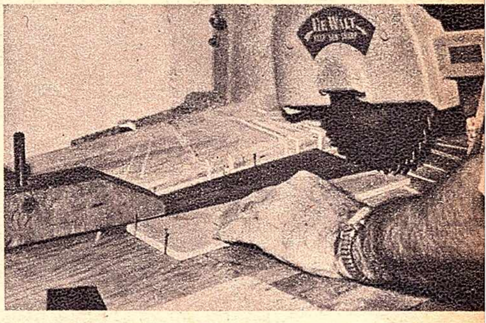

¾" sq. x 14¼" CORNER LEGS
13⅝" TOP RAILS (2)
¼" DADOES
3/16"x¼" DADOES
¾"
¾"
8⅛" TOP RAILS (2)
14¼"
H. CLARK
¼" STOCK BOTTOM
6⅜" BOTTOM RAILS (2)
11½" BOTTOM RAILS WITH ¼" DADOES

these cuts—those sections that are most attractively grained. For the design pictured above follow the layout at the left; however, other combinations are possible, so arrange them to suit yourself.

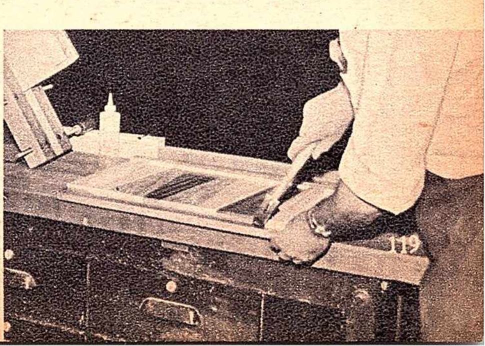
A clamping jig is essential for wedging the glued edges of the woods together when forming the sides of the basket. The one used here consisted of a plywood base with quarter-inch pieces of scrap arranged around the work. A sheet of waxed paper along each side of the glued pieces kept the panels from sticking to the jig. White glue was used because it doesn't stain.

With the edges glued and wedged together a second piece of plywood must be placed over the panel and clamped in place to prevent warping. When the glue dries remove the clamps and sand each panel.

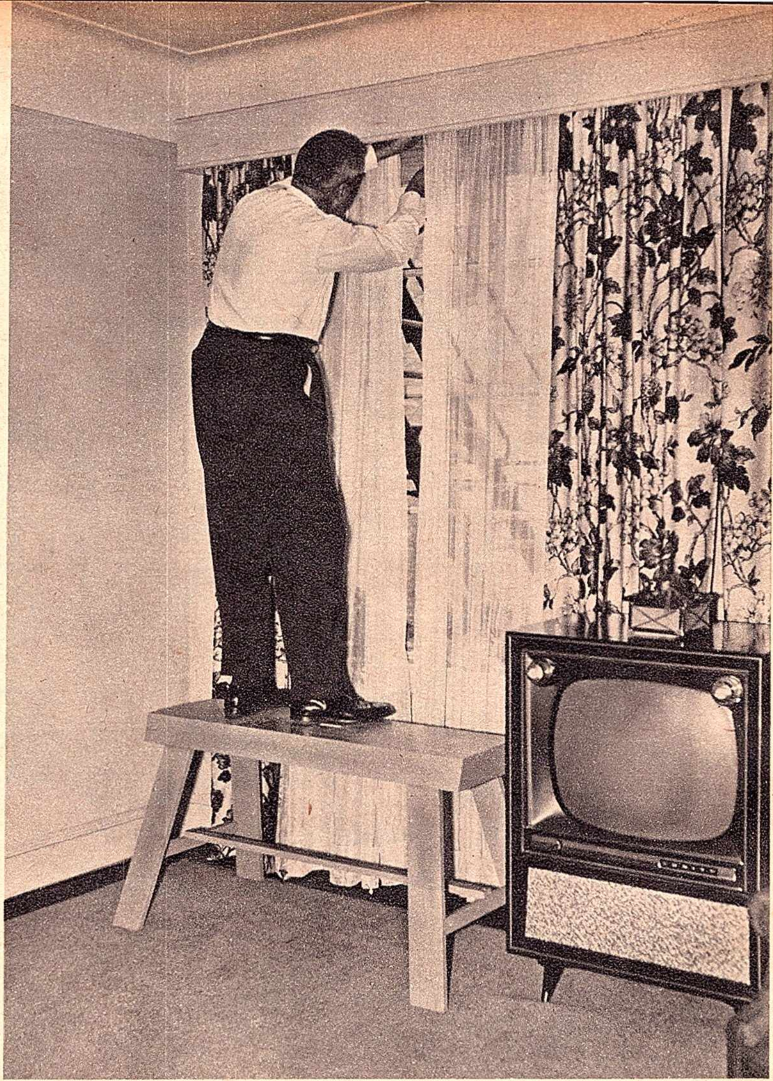
During this drying period cut the twelve ¾-inch-square walnut strips that will be used for the four legs and for the top and bottom rails. The legs are 14½ inches long with a quarter- [*Continued on page* 146]



A COUPLE of nails serve as a stop so that wedges are cut to same size. **JIG** (below) must be used to clamp together the wedges for each panel.



BROAD BACK SAWHORSE



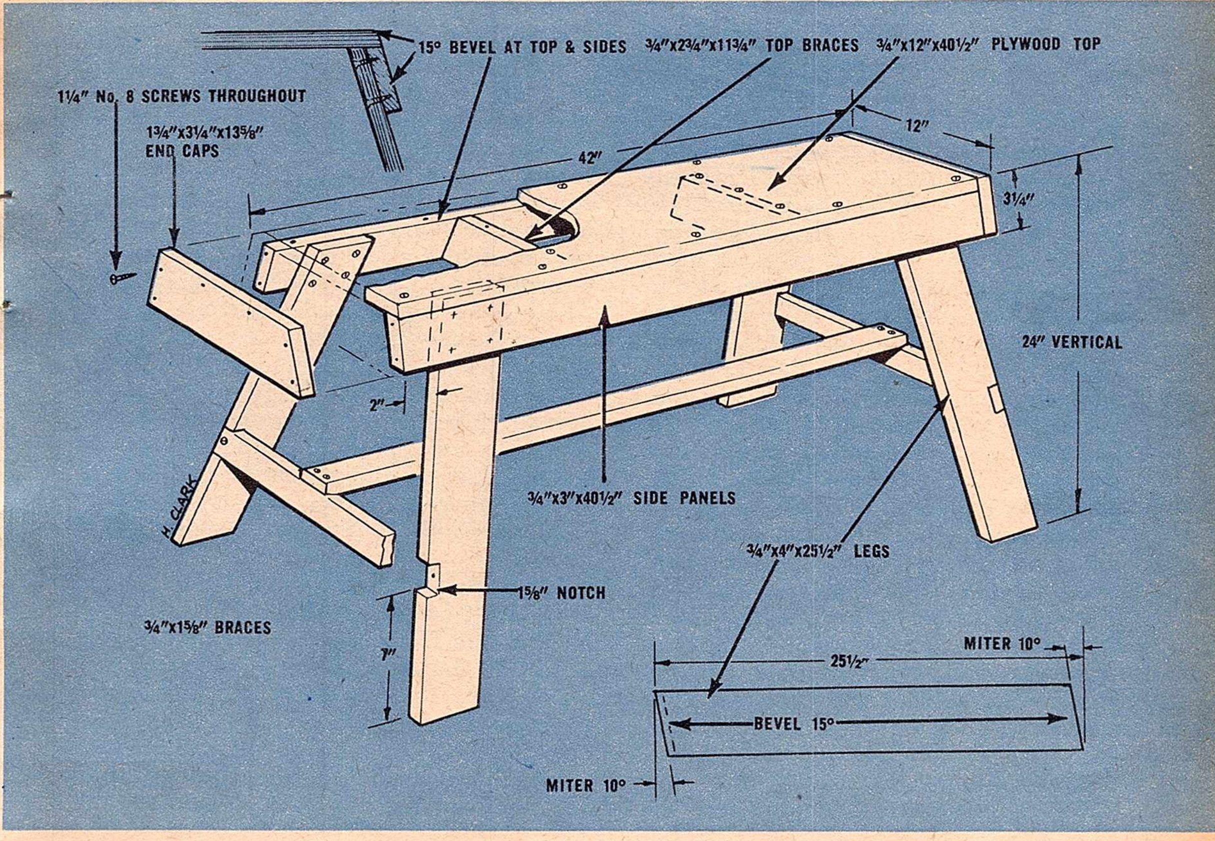
THIS HORSE also serves as a safe and stable platform when extra height is needed for a chore like hanging the drapes.

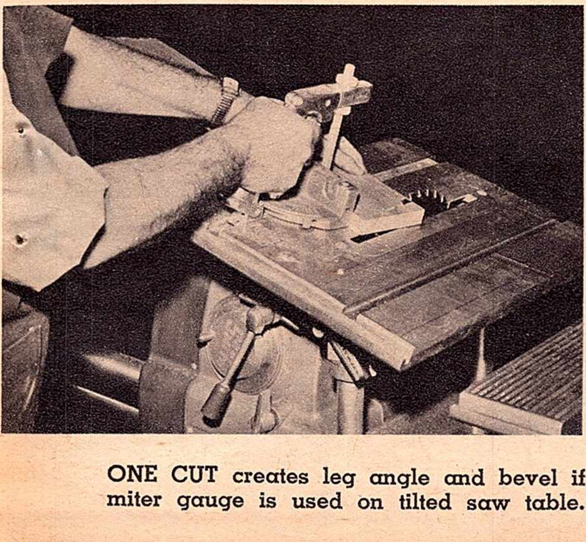
You'll get much more use out of a sawhorse if you build it with an extra-wide plywood top.

IN the conventional sawhorse, a 2x4 serves as a backbone. This is fine when two horses are bridged with lumber to form a large platform or working surface, but two horses and the bridging aren't easy to move around and a single horse has little general use.

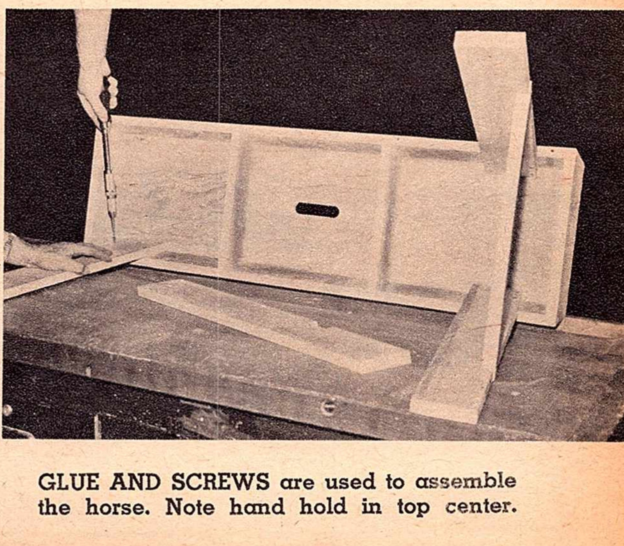
Next time you build a sawhorse, why not use a plywood sheet for the backbone? Then the individual horse has a great many uses. The broad surface makes a good bench for tools and supports sizeable pieces of lumber for sawing. It also doubles as a seat for the man who pauses (briefly, of course) to contemplate his work—and it's a safe, stable platform when there's need to be two feet taller. As is evident, the building doesn't take much more effort than the conventional horse and there's no doubt that the innovation is well worth it.

With the aid of a miter gauge and a tilting saw table or blade, all the cuts are easy to make. Just take care when cutting the notches for the lower braces since two of them must be made with the table or blade tilted 15° to the right and the other two with it tilted 15° to the left. •


15° BEVEL AT TOP & SIDES
¾"x2¾"x11¾" TOP BRACES
¾"x12"x40½" PLYWOOD TOP
1¼" No. 8 SCREWS THROUGHOUT
1¾"x3¼"x13⅝" END CAPS
42"
12"
3¼"
24" VERTICAL
2"
H. CLARK
¾"x3"x40½" SIDE PANELS
¾"x4"x25½" LEGS
1⅝" NOTCH
¾"x1⅝" BRACES
7"
MITER 10°
25½"
BEVEL 15°
MITER 10°



ONE CUT creates leg angle and bevel if miter gauge is used on tilted saw table.



GLUE AND SCREWS are used to assemble the horse. Note hand hold in top center.

CAR CARE

YOUR NEW CORVAIR

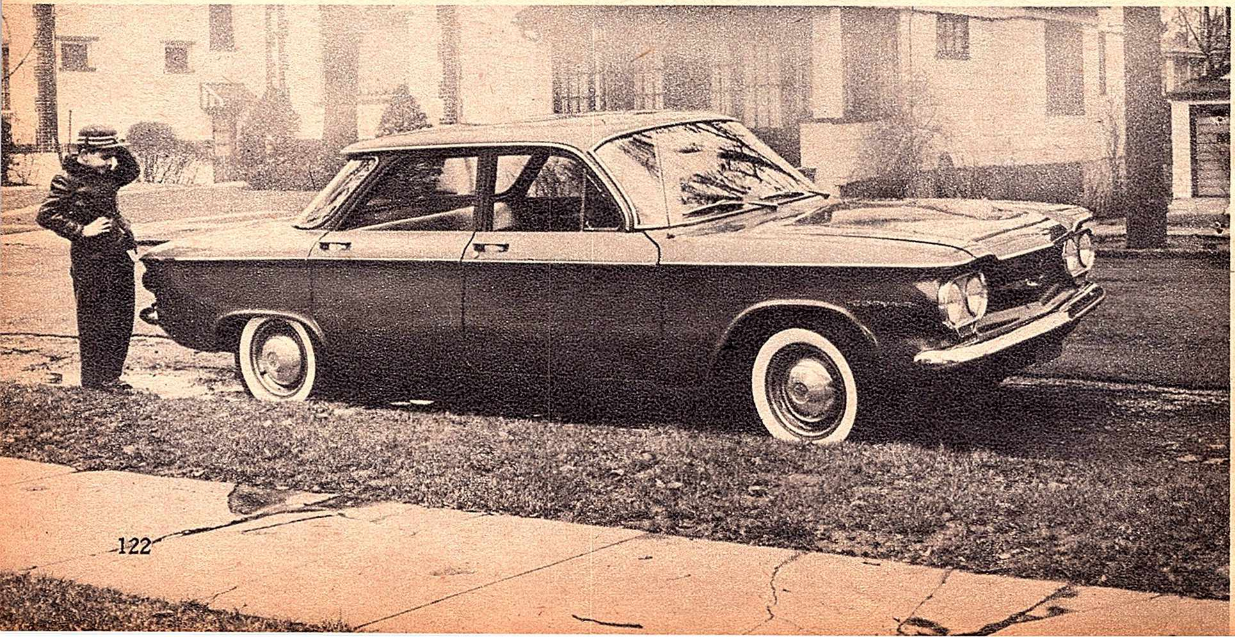
By Frederick C. Russell
Member, Society of Automotive Engineers

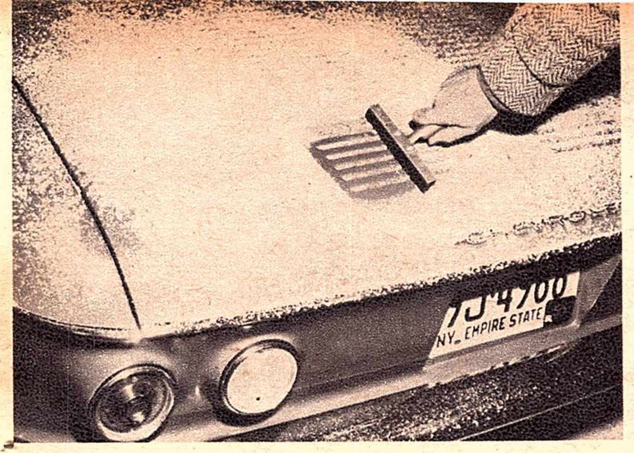
SINCE Chevrolet's Corvair is the only American-made car with the engine in the rear, almost all a new owner needs to know concerns the power plant. Up front there is a fairly standard recirculating ball-type steering gear, an independent front-wheel suspension system with coil springs and spherical joints and a gasoline heater for instant warming in the most frigid weather. True, it's a bit unconventional to find the gas tank under the toeboard and to lift the hood to get to the spare tire, but the real surprises are found in the horizontal-opposed, six-cylinder, air-cooled engine.

This engine has two cast aluminum alloy crankcase halves, steel tubes to house the push rods, two identical Rochester Model H carburetors to feed each of the two intake manifolds and an exhaust system that combines the exhaust pipes, muffler and tail pipe. Very special, too, is the Transaxle which combines the transmission and the axle differential into a single unit.

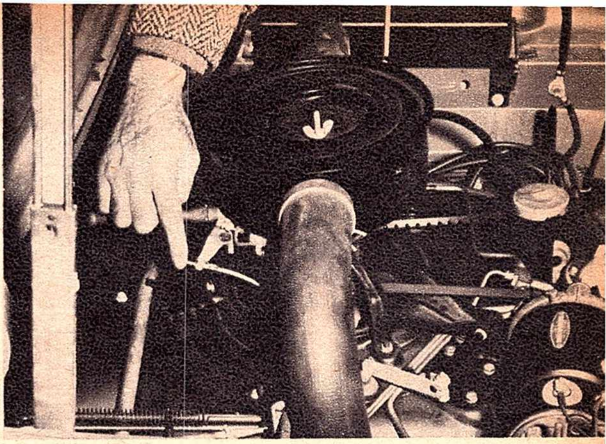
We can see immediately that the placing of the engine calls for a complete revision of several conventional ideas on car care. Take tires, for example: U. S. Rubber Company engineers worked for nearly two years to produce a soft rubber tread with a low cord angle carcass to provide a "big car" feel with greater stability. Goodyear and Firestone also supply the new-type 13-inch tires for the Corvair. But regardless of make, it is absolutely essential that the front tires be held to a pressure of 15 pounds while the rear ones are kept at 26 pounds. This is the pressure reading when the tires are cold. An increase of two pounds per tire is permissible if the car is heavily loaded.

When you rotate tires on your Corvair, don't forget to readjust pressures so that the front ones will not be too hard and the rear ones too soft. If you should let the rear tires run low on pressure, there will be pronounced oversteering. Bear in mind that this doesn't refer to ease of steering, but to a tendency for the rear end to spin out.

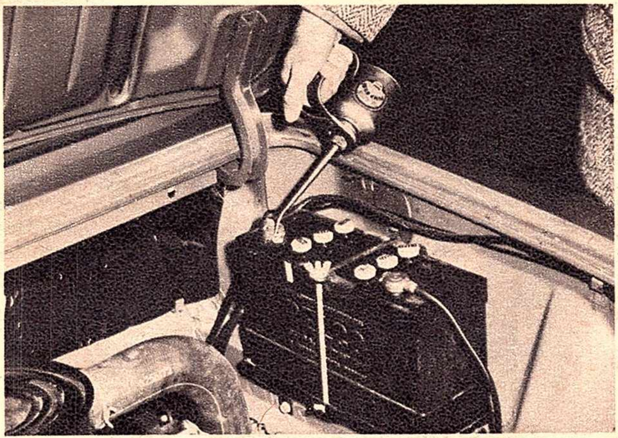




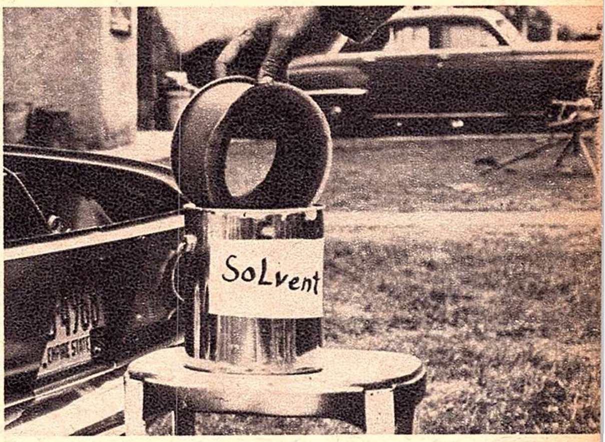
IN WINTER, snow may block air intake slots; clean them before starting engine.



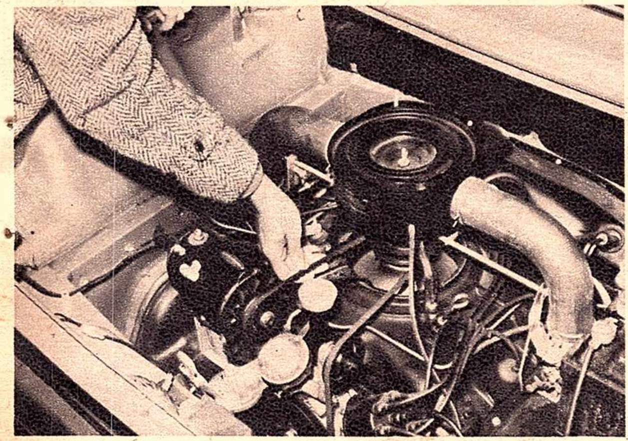
VALVE at blower intake opens fully if thermostat fails, will stall cold engine.



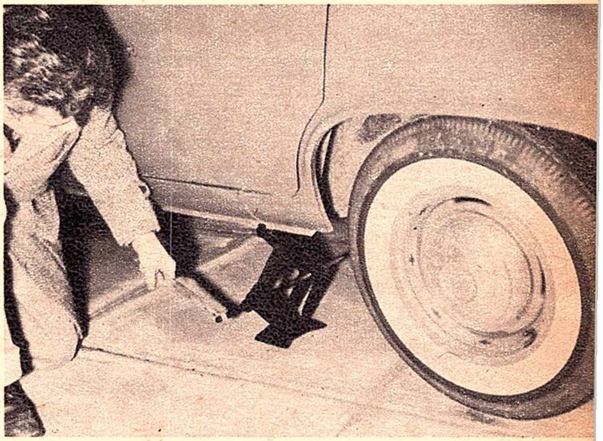
OILING the felt washer at the positive battery terminal will prevent corrosion.



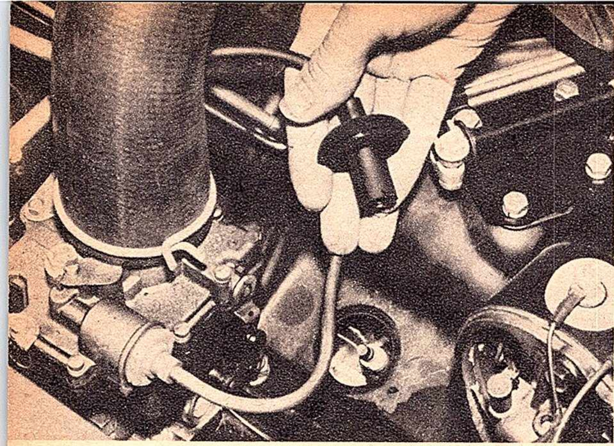
AIR CLEANER element should be removed and cleaned in solvent every 5,000 miles.



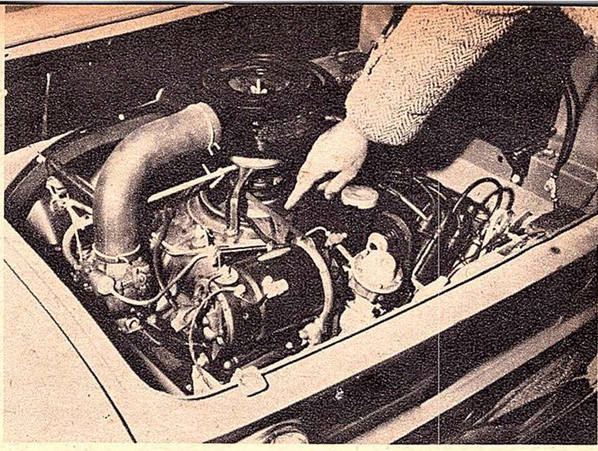
TENSION of 75 lbs. is required on drive belt between blower and the idler pulley.



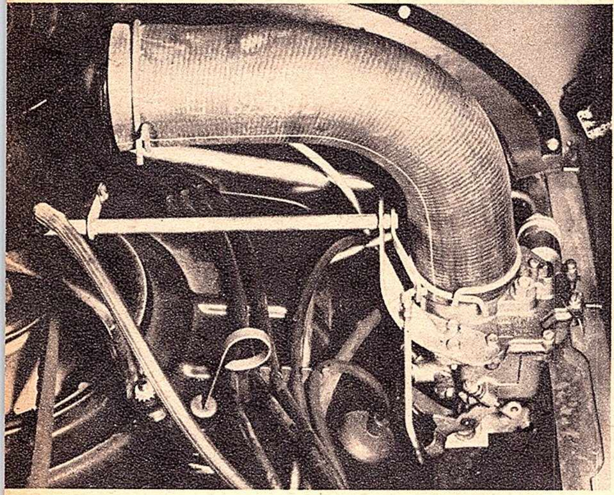
SPECIAL JACK doesn't go under axle; it is placed under the side edge of the body.



COVERS on spark plugs must be tight; if two are loose, engine cooling is affected.



BLOWER on the air-cooled engine is located directly below air cleaner element.



TWO CARBURETORS feed the intake manifolds; the right-hand one is shown above.

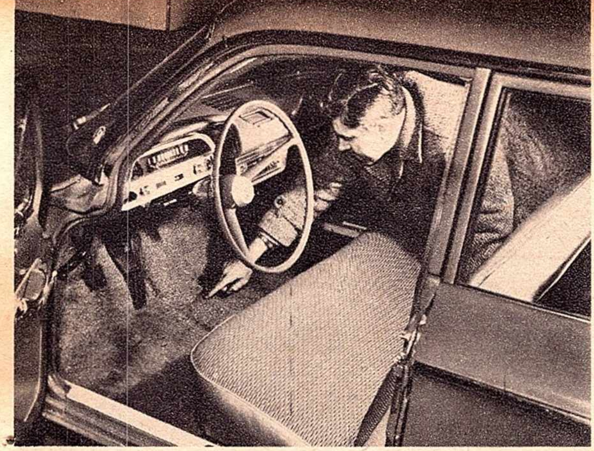
BACK of rear seat folds forward to provide a large flat area for some extra cargo.

Over-sensitive steering will result from over-pumped tires. Also keep pressure in mind if you switch to the spare.

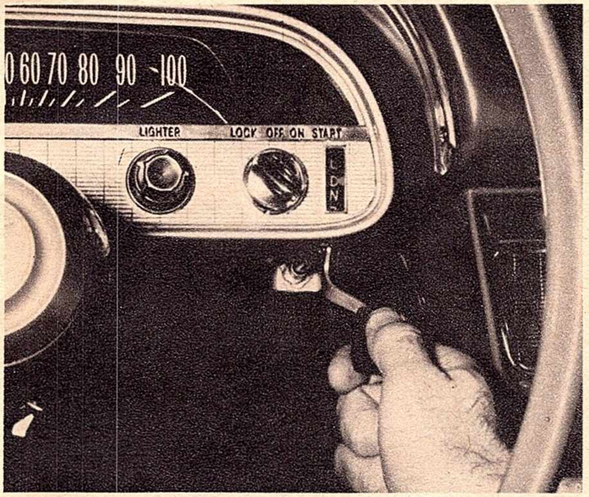
Corvair's independent rear suspension involves a swing axle. Thus the rear wheels have toe-in. This particular measurement should range from zero to one-quarter inch. Adjusting is done by shimming the front mounts of the transmission so as to move the whole power train toward the front or back.

This matter of the power train is one of the special features of the new car. It consists of the engine with clutch, transmission and axle, the latter three being ahead of the engine. While the rear axle housing and the one for the transmission have separate fillers and drains, lube can flow from one to the other. Thus it is necessary to check the lube level only in the one that is higher. There is, however, no mingling of the lube supplies if the car is equipped with the special Powerglide automatic transaxle.

Just for the record, the transaxle requires 3.1 pints of multi-purpose or universal gear lube. Change the lube after 1,000 miles, check it every 1,000 miles and change it again every 10,000 miles. For the engine, Chevrolet recommends SAE 30 oil if the temperature isn't expected to drop below 32°F, SAE 10 if the minimum is minus 10°F, and



LEVEL FLOOR is a feature since drive shaft doesn't extend from front to rear.



DRIVE SELECTOR is mounted on the dash to the right of the steering wheel shaft.

SAE 5W or SAE 5W-20 multi-viscosity oil below minus 10°F. For maximum engine protection under all driving conditions, Chevrolet recommends oils designated "For service MS" or "For service DG." These will lessen the formation of sludge and varnish. A neat trick to lessen the chance of corrosion on the positive battery terminal is to saturate its felt washer with chassis lube every 1,000 miles.

The Corvair oil filter is a full-flow job, meaning that all the oil from the pump is delivered to it. For this reason it is important to change the filter cartridge after the first 5,000 miles and every 4,000 miles there- [*Continued on page* 148]

SERVICE TIPS

from Detroit

American Motors recommends removal of the front right seat adjuster spring to improve sliding operation on all units built prior to May 10th, 1959; clean and lubricate slides occasionally thereafter.

Chevrolet warns that adhesives used for attaching labels or stickers to windows should not be of the animal or protein glue variety; these may etch and pit the glass. Pressure-sensitive type labels are recommended instead.

When raising a 1960 DeSoto car with a floor jack, the jack must never be used on any part of the car's underside except the front suspension lower control arms or the rear axle housing.

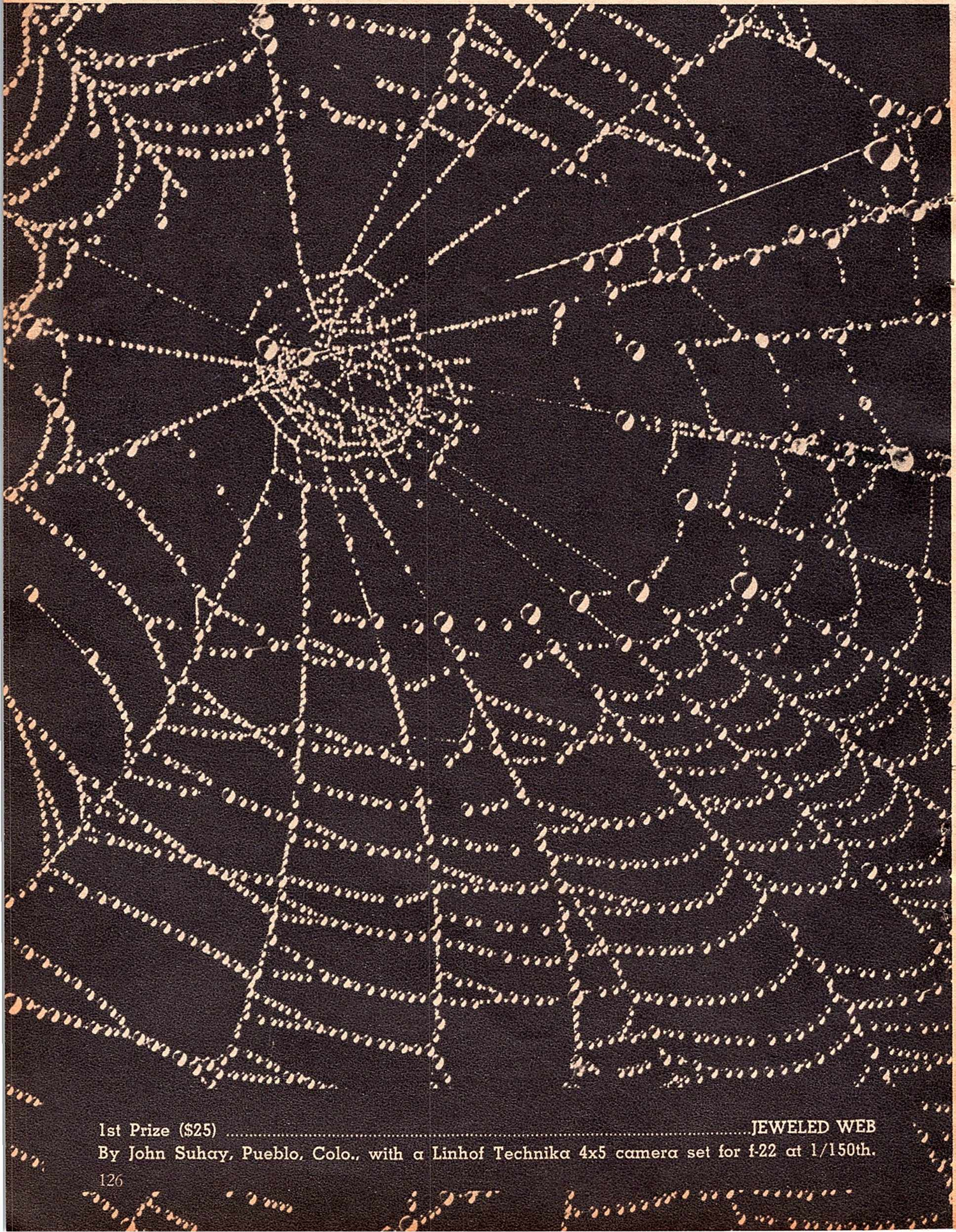
Some '59 Fords develop a brake shoe slapping noise on their left side—the result of "threading" the brake drums during manufacture. Correct this problem by having your mechanic turn the left drums with a light cut to remove the "threading" and by sanding the linings to remove glaze.

Failing to correct a poorly adjusted fan belt will cause excessive wear of water pump and generator bearings, squealing during acceleration and slipping at high speeds, Valiant owners should install belt part No. 2129078, which has improved gripping qualities.

When replacing a torsion bar spring on '57 and '58 Chryslers or Imperials, a rubber seal (part No. 1731266) should be installed on the torsion bar anchor end to prevent accumulation of road salt, dirt and moisture in the torsion bar anchor.

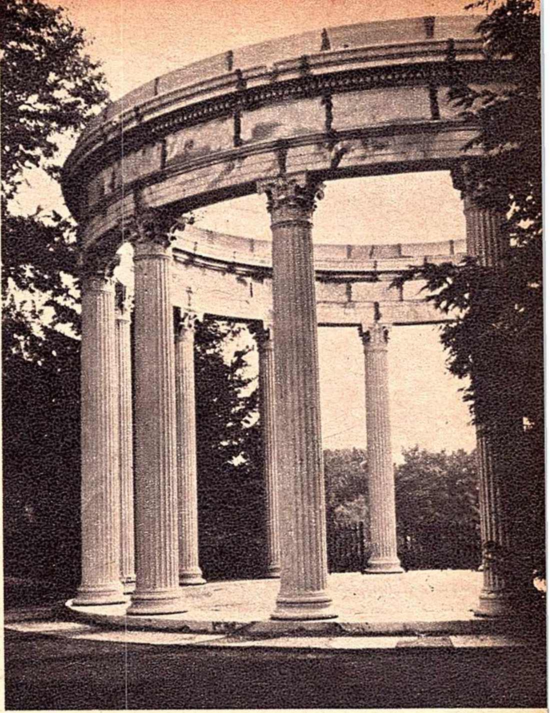
Always maintain a ¼-inch to ¾-inch clearance between the engine fan and radiator core of your new Plymouth.

MONTHLY PHOTO CONTEST



1st Prize ($25) .... JEWELED WEB
By John Suhay, Pueblo, Colo., with a Linhof Technika 4x5 camera set for f-22 at 1/150th.

$10 Award ..............METROPOLITAN OASIS
Desolate figure seated in Central Park is unaware of the camera of Harry Collins, Brooklyn, N. Y., which has sought him out. Picture was taken using a Rollei, Plus-X film and a yellow filter; f-16 at 1/150th.



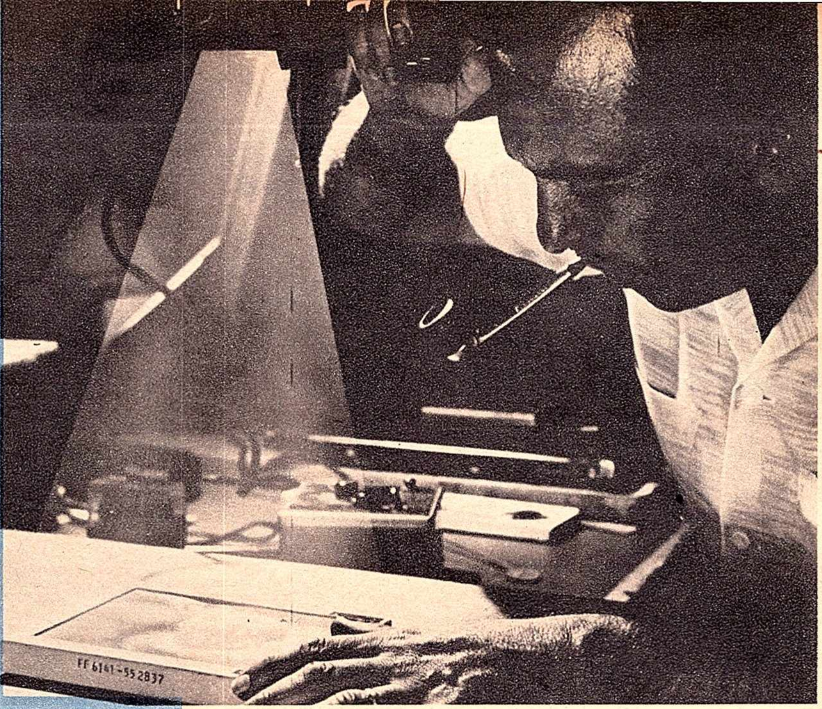
Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Address entries to: *Mechanix Illustrated*, Photo Contest, 67 W. 44th St., N.Y.C. 36.

$10 Award ....LITTLE PARTHENON
Verichrome Pan film in a Rollei aimed by Margaret Reilly, Tarrytown, N. Y., recorded these classic columns; f-16 at 1/125th.

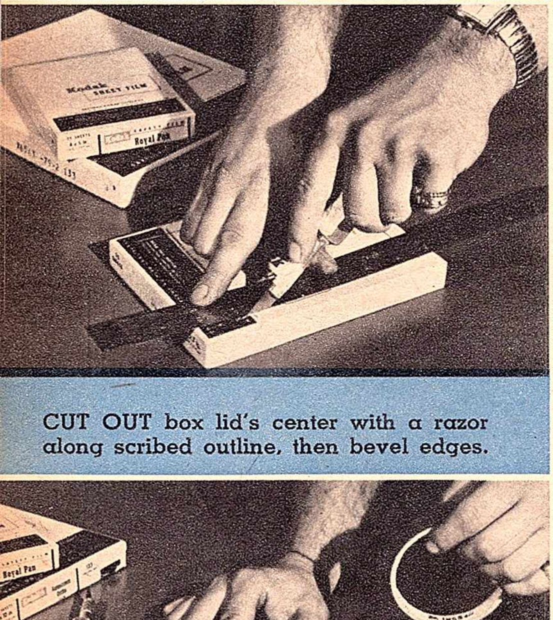
$10 Award ....UPS AND DOWNS
Taken by David Strickler, Lebanon, Pa., roll film camera, Super-XX; f-5.6 at 1/250th.

NO-COST EASEL

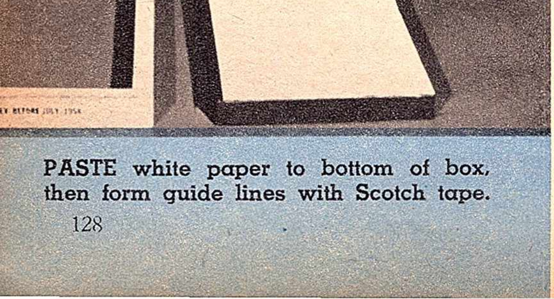
Make easels of any design or shape from the odds and ends available in every darkroom.



EASEL is positioned in projection area and the bottom taped to the enlarger base.



CUT OUT box lid's center with a razor along scribed outline, then bevel edges.



PASTE white paper to bottom of box, then form guide lines with Scotch tape.

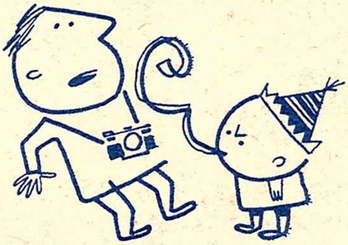
SOONER or later every photographer needs an extra easel or one of unusual size or shape. Here is one that can be made from materials readily available in any darkroom; these include empty film boxes, a ruler, razor blade, some Scotch tape and white paper.

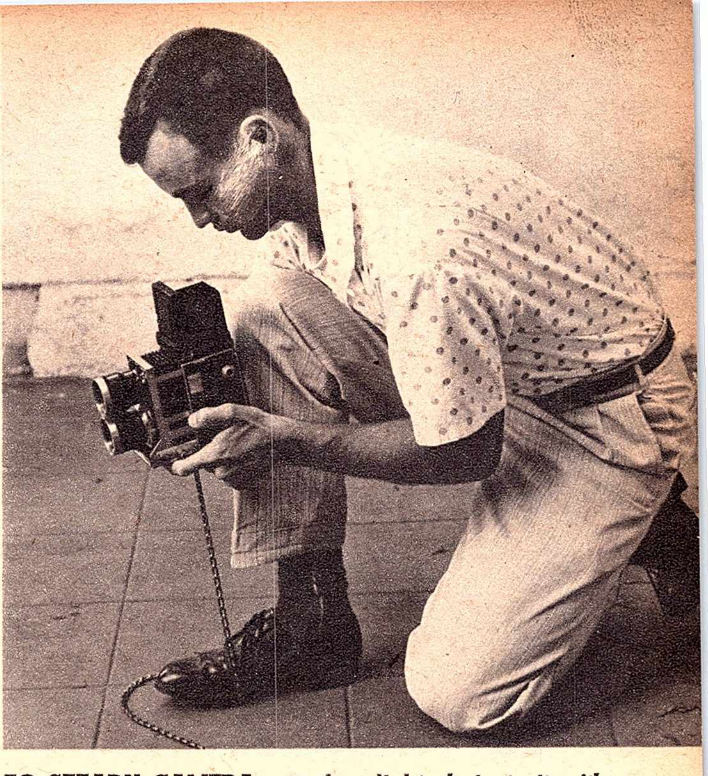
First choose a box of the desired easel size—remembering that its dimensions must be ample enough to allow for a quarter-inch border all around. Outline the desired image size and shape on the lid of the box with a scribe, then cut out the center portion with a razor, beveling the edges slightly to achieve sharper image borders. Next, blacken the edges with India ink.

Paste a piece of white paper on the bottom half of the box and make guide lines along two edges with three or four thicknesses of Scotch tape, trimming off the excess with the razor.

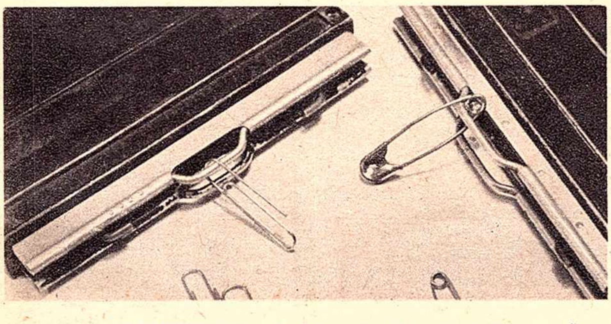
To use the easel, position it in the projection area and tape its bottom half securely to the enlarger base so it won't shift when the paper is inserted. Now, following the guide lines, insert the paper, position the top section, and make your exposure.—*G. L. Guenot*

PHOTO TIPS

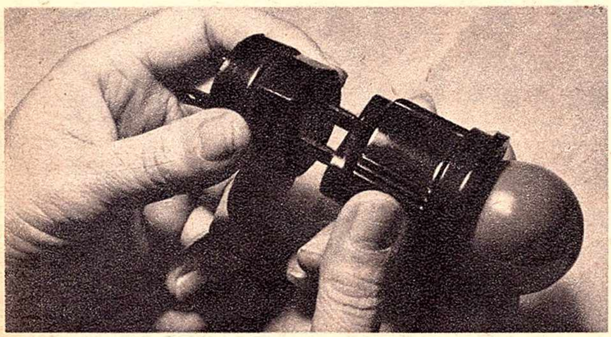




TO STEADY CAMERA, attach a light chain to it with a tripod mounting screw, plant one foot on the chain's free end, then pull camera upward until chain is taut.

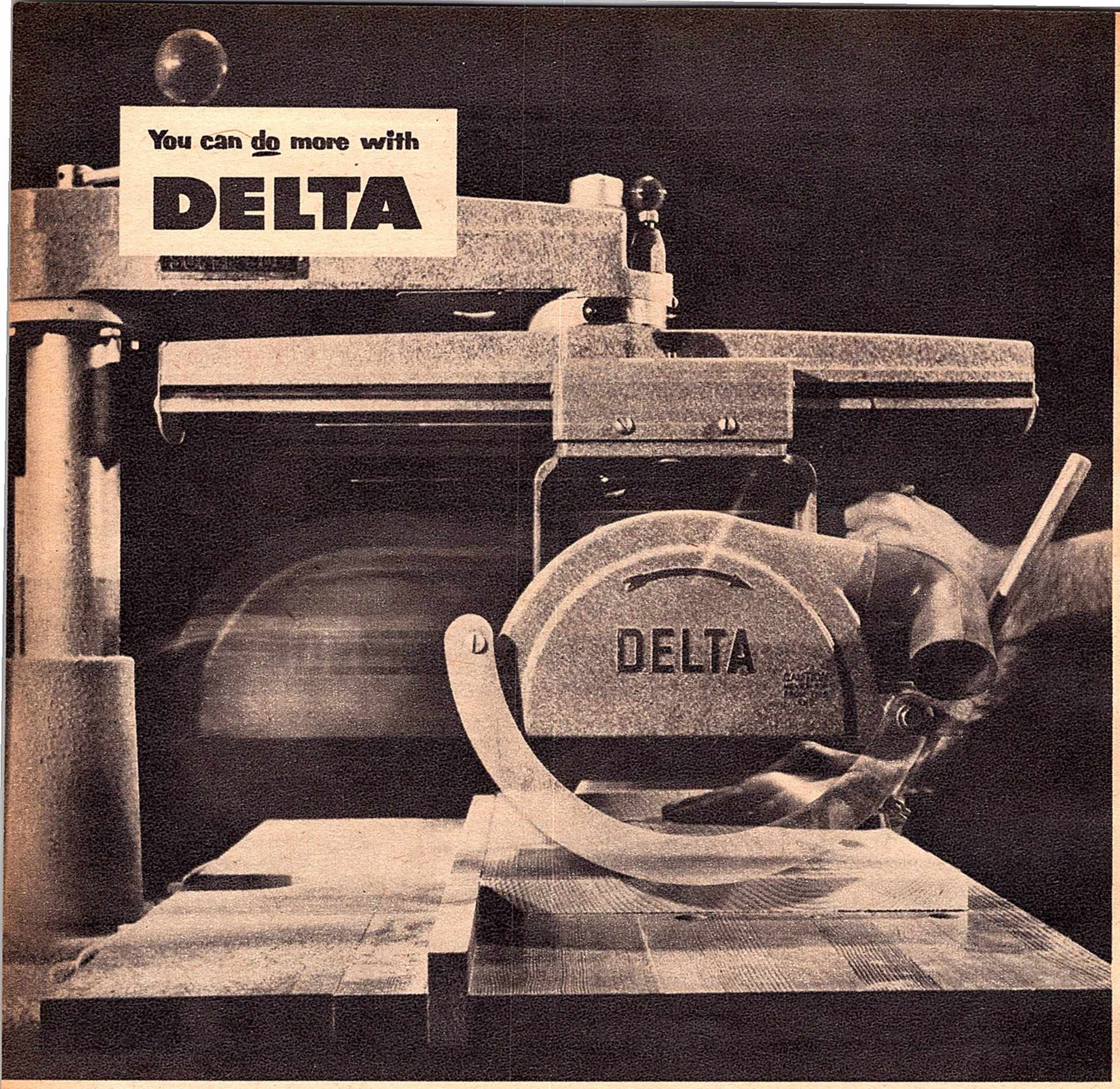


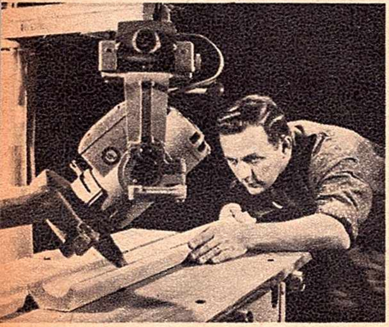
IDENTIFY film holders in the dark by marking them with safety pins and paper clips.



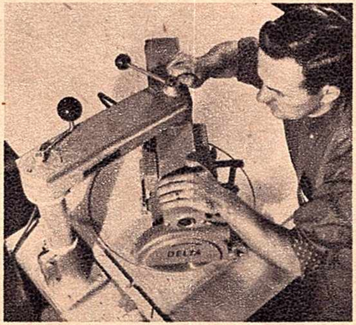
BLINKER switch behind red light makes a darkroom timer; count blinks for exposure.

SCORE tripod legs then paint grooves to speed setting up at much-used heights.

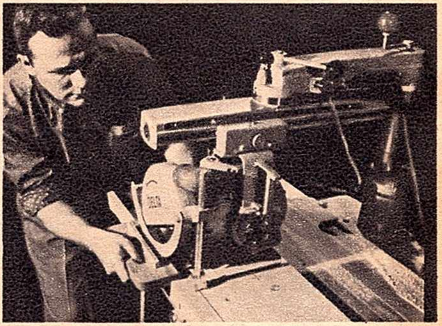




CUTTING MOULDINGS such as this extra large cove moulding is easily done with the regular blade. By simply adding the moulding cutterhead you can cut an endless variety of shapes.

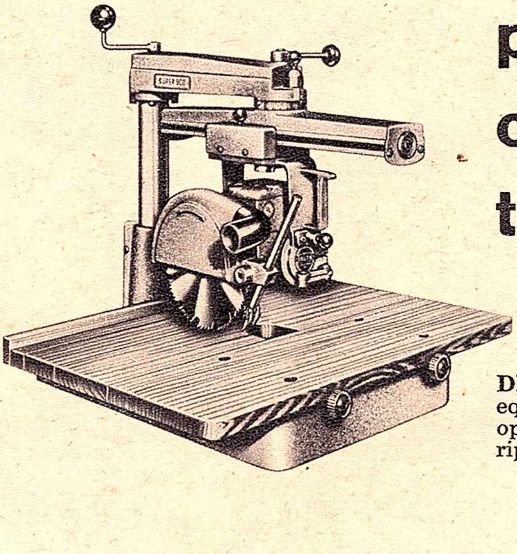


CIRCLE CUTTING is not limited to only one diameter—another advantage of exclusive "Turret Arm" action. You'll really appreciate how easy it is to do this unusual operation with complete accuracy.



SAFE RIPPING of narrow strips is assured because you can lock the fence quickly in the "up front" position. Handy push-grip provides smooth, steady feeding action from start to finish.

"Super 900" Radial Saw

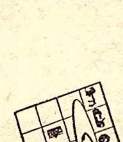


puts more of your skill to work

DELTA "SUPER 900" RADIAL SAW—equipped with powerful motor that develops up to 2 H.P.; cuts 2½" thick stock, rips up to 24" wide.

Here's a workshop workhorse that tackles the toughest jobs you've got—and delivers perfection every time! This rugged Delta Radial gives you precision that is actually built in, yet is easy to use right from the start. You get all the flexibility that Delta "Turret Arm" action provides. Swing, spin or tilt the head—you'll do dozens of operations conveniently, safely because the cutting tool stays over the table throughout a 360° swivel. With this machine you never have to worry about alignment. Thanks to Delta's exclusive, new "Micro-Set" Miter Stops, you can be sure of perfect 90° and 45° cuts for the *life of the machine.*

There are many other unequalled features you'll recognize. And because you know tools, you'll appreciate the industrial quality that Delta's 31 years of experience build into every power tool. So whether you're adding more versatility or starting a one-tool workshop—get the finest! See the Delta "Super 900" Radial Saw and full range of money-saving accessories when you visit your Delta Dealer (he's listed under "TOOLS" in the Yellow Pages) or see it in action at your leading Department, Hardware or Building Supply Store. Don't wait!



See the world's most complete line of home workshop power tools and accessories—pictured and described in this colorful, FREE Homecraft catalog. Write to: Rockwell Manufacturing Company, Delta Power Tool Division, 556C N. Lexington Ave., Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Co. of Canada, Ltd., Guelph, Ont.

DELTA POWER TOOLS
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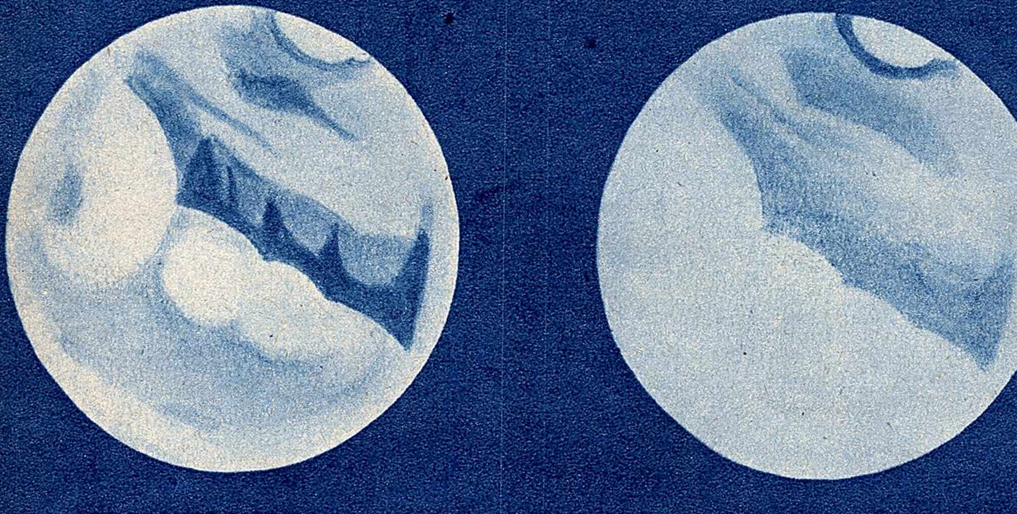
The Amateur Telescope Maker's Page

OBSERVING THE PLANETS THROUGH COLOR FILTERS

By V. A. Firsoff



THE PLANET MARS as seen through a red filter (left) and with a green filter.

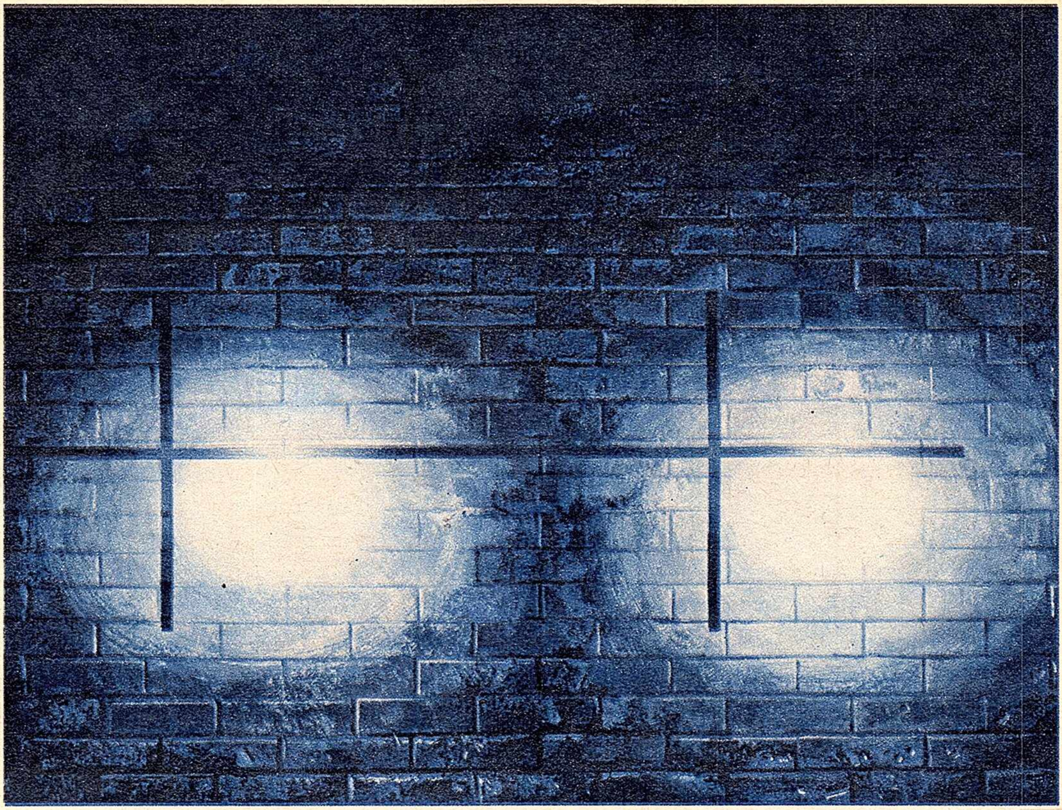
BESIDES spoiling the clarity and steadiness of telescopic vision, the atmosphere tends to kill colors. Look at the gray-blue tints of a distant landscape. How dull and colorless it appears by comparison with the nearby trees and shrubs!

Mars has an atmosphere of its own which, though only about a fifth of ours in thickness, has considerable obscuring powers. Venus and the giant planet Jupiter have denser and more extensive gaseous envelopes and their color degradation becomes superimposed on our own air when we try to examine their surface features.

Not all causes of color distortion are atmospheric. Some of them are in our own eye and brain. For example, if we have a strong source of red light close to a faint one of yellow, the true coloring of the yellow tends to be drowned in the after-image formed in the retina of our eye by the brighter red light. This after-image is in the complementary color—in the present case, blue-green. If the dark areas of Mars appear green to the eye this does not necessarily mean that their true coloring is green, for the after-image of the brighter yellowish and reddish areas of the disk will be green-blue.

It is important, however, to know a planet's true color. If in the above example the Martian "seas" are really green they are more likely to be vegetational areas than if they were merely gray and their greenish hue spurious.

There is where the color filters come in. They can [*Continued on page* 154]



Falcon's new parabolic reflector gives you greater vision for night driving.

Why does the Falcon have single headlamps and dual horns?

Single headlamps cost less to replace. They're *right* for an economy car. But before Ford engineers would OK them for the Falcon, they had to devise a single-light system that would not sacrifice safety.

Result? A new parabolic reflector so efficient Falcon drivers can actually see farther in the face of oncoming traffic than with any dual system.

This same foresighted engineering is found in a single, *adjust-it-yourself* carburetor, bolted-on front fenders that cut repair costs, a gas tank accessible from the trunk, and an aluminized muffler that lasts up to twice as long as ordinary types.

Dual horns cost more! But horns almost never need replacement so there's no long-range economy in skimping on the original installation. And dual horns are better. No single horn gives the quality of sound of two horns. And there's added safety in the warning power of two horns.

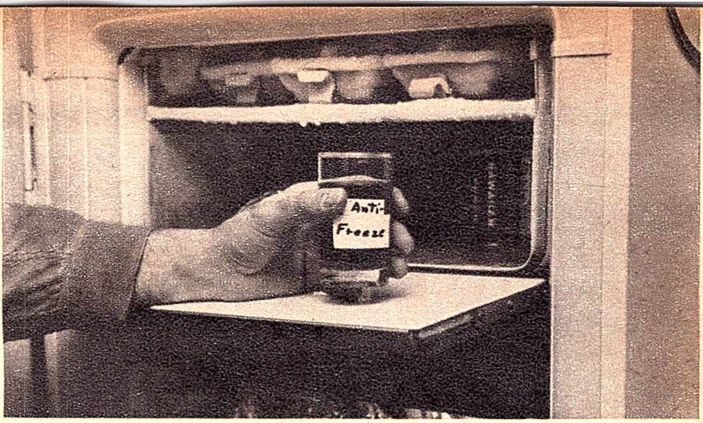
That's hidden quality that means *long-range* economy. You'll find it throughout the Falcon. It's there in the sound-conditioned roof, in underbody members that are zinc-coated for protection against rust, in a finish that *never* needs wax, a new battery mount that makes batteries last longer.

Economy where it *pays*... quality where it *counts!* That's the Falcon; the easiest car in the world to own.

THE
1960
FORD
Falcon

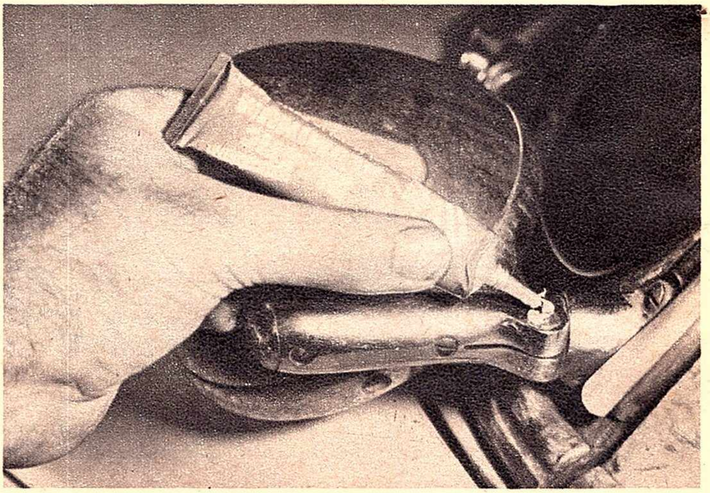
FORD DIVISION, Ford Motor Company

CAR KINKS

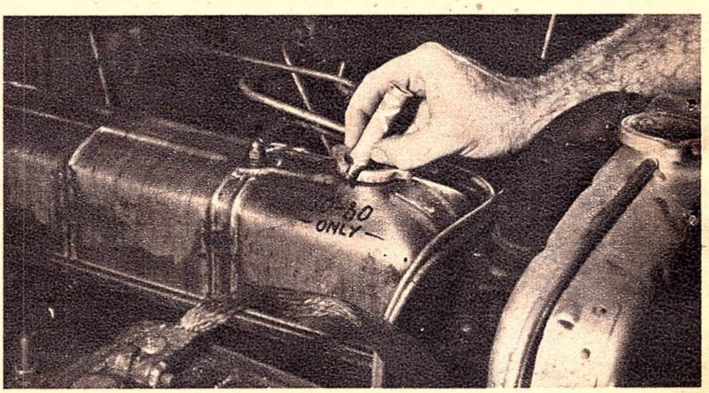


MIDWINTER CHECK OF ANTIFREEZE SOLUTION can be made by taking a portion of it from your car's radiator and keeping it overnight in your refrigerator's freezer.

STONES AND PEBBLES that become lodged in the tread of a tire can damage the rubber. An easy way to remove them is to pry them out with your ignition key, as illustrated above.

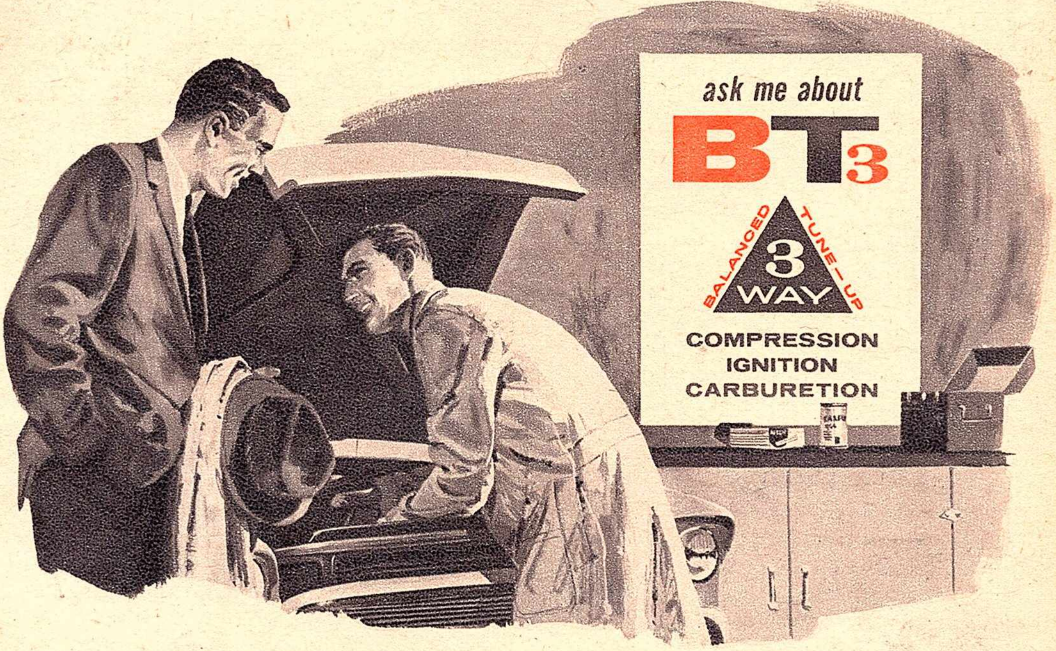


FRUSTRATE THIEVES by applying plastic aluminum to the screw slots on your car's accessories. Hardened plastic aluminum removes with a soldering iron.



NEW FLUID marking pencils can be used to write down the dates when you last flushed the radiator, changed the oil, etc. A bit of solvent removes ink.

NEW BT3 ENDS TUNE-UP GUESSWORK!



NEW TUNE-UP CONCEPT BALANCES CARBURETION, COMPRESSION AND IGNITION TO RESTORE *NEW CAR POWER!*

Maintain the new car power, performance and economy that was designed into your GM car. Get a BT-3 tune-up . . . the *balanced* tune-up, three ways.

With this new concept, your compression, ignition and carburetion are checked, adjusted and restored to new car condition. Every replacement part is factory approved. For example, all carburetor parts are genuine parts for Rochester-GM Carburetors . . . original equipment on more new cars than any other carburetor. And the whole step-by-step, scientific procedure of BT-3 is factory recommended.

Stop wherever you see the BT-3 sign, and enjoy the new car performance that only a balanced tune-up can give. Or if qualified service is your business, contact your nearby UMS distributor to learn how to give BT-3 to your customers.

GM

America's
number one
original equipment
carburetors

ROCHESTER CARBURETORS

GENERAL MOTORS

ROCHESTER PRODUCTS DIVISION OF GENERAL MOTORS, ROCHESTER, NEW YORK

Guest Cabin

[*Continued from page* 104]

walls. Now 2x6 blocking must be carefully cut and nailed between the rafters all around.

The 4x8-foot exterior wall paneling is then applied. Texture One-Eleven fir plywood is vertically scored and displays pleasing shadow effects. No end trimming is necessary since the wall height is exactly 92 inches, the extra four inches extending down below the floor to form a skirt. Two-by-fours all around the bottom of structure give it a finished appearance.

The exterior plywood walls are fastened with six-penny galvanized nails, six inches apart to take full advantage of the ⅝-inch thickness of Texture One-Eleven so that diagonal bracing is unnecessary. This building does not even require felt paper under the siding because the edges of the plywood panels are lapped and make a tight seam. Corner bead of 1x2-inch corner trim is nailed at the corner of each outside wall from top to bottom.

Once the walls are completed it's a simple matter to cut out the window openings. Jalousies were used because they permit about twice as much ventilation as conventional windows and the aluminum frames require no maintenance. Fins on the window frames were nailed directly to the siding, then covered with 1x2-inch trim.

Putting on the roof is simply a matter of nailing down the ⅝-inch plywood panels. By shopping around you should be able to buy these in nine-foot lengths, thus eliminating piecing. Roll roofing with a mineral surface goes down over the roof deck.

Start at the higher side of the roof (in this case, the front) and let the leading edge of the first strip hang down a couple of inches so you can nail a batten over it. Then apply sealing compound to each edge before lapping the next strip. Nail every four inches for a tight seal.

Calk with a cartridge-type gun all around each section of 2x6 blocking and around the windows, especially in the grooves of the plywood. For additional rain protection, install flat or corrugated plastic sheets on the large front overhang.

The building will acquire a smart finished appearance by applying a 1x6-inch fascia all around. This ties together the rafters protruding along the front side of the building. To lend some style to your cabin you may want to taper the overhang—as was done here—from the extreme depth of five feet to two feet at the other end.

The interior is finished off with quarter-inch interior-grade fir plywood on the walls. It nails right into place with a minimum of cutting due to the four-foot module design. Practically no trim is necessary, except around windows, where quarter-round makes a finished edge. The ceiling is half-inch prefinished white insulation board, also in 4x8-foot panels. Redwood battens cover the seams. The floor may be painted or covered with tile or rush squares.

Three electric outlets were installed for wall fixtures and for a small fan-type heater. The current can be switched off and on either from within the cabin or from a switch in the kitchen of your house. A telephone and buzzer system provides communication with the house, and all wires are run through conduit to preserve the natural setting.

The area was landscaped with low-spreading shrubs that conceal the base of the building but do not cut off ventilation. A few fast-growing pines and cypresses, planted six or eight feet apart will provide a fragrant woodsy setting in a relatively short time.

You may call your little auxiliary room a teahouse or a poolside cabana. But even if you don't have a pool and are strictly a coffee drinker you'll get plenty of enjoyment and privacy from this cabin for many years to come. •

FUTURA

Scaled after the famous Lincoln Futura, this model has an electric motor, lights, indicator and plastic canopy. For full-scale plans send 50 cents to MECHANIX ILLUSTRATED, Fawcett Bldg., Greenwich, Conn. Specify Plan M-237, Futura.

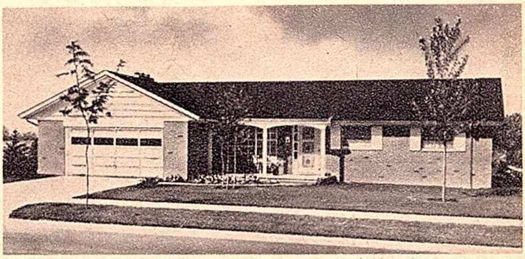
Build a Liberty Home *Yourself* WITH NO FINANCING PROBLEMS

SAVE AS MUCH AS $5000

THE AMHERST

IF YOU CAN DRIVE A NAIL, YOU CAN BUILD A Liberty HOME!

Beat high building costs . . . and have an outstanding home, too. The revolutionary, new Liberty Ready-Cut method gives you a beautifully designed home . . . EASY TO ASSEMBLE . . . at unbelievably low cost. Everything is precision cut for exact fit . . . saving days of costly labor. You receive all framing and finish lumber, assembled windows, pre-fit mortised doors, oak flooring, insulation, self-sealing roof shingles, nails, paints, hardware, plus complete building plans and instructions.



THE MANCHESTER

ONLY WITH A Liberty Ready-Cut Home CAN YOU GET ALL THESE EXCLUSIVE BUILDING SERVICES

UNCONDITIONAL GUARANTEE—Your Liberty Home is covered by an unconditional guarantee for quality, quantity and soundness of construction.

FINANCING NO PROBLEM—Liberty Homes are approved by Banks and Savings and Loan Associations everywhere. Acceptable for FHA and VA financing.

SOLD DIRECT TO YOU—Liberty has no salesmen. You buy direct and save sales commissions. You make your own decision without high pressure tactics of any kind.

SAVE $5000—You save on material cost, labor cost, contracting fees. You eliminate all middleman's profits, architect's fees and costly material waste.

100% QUALITY—Only materials of unquestioned quality are used. All lumber is kiln-dried. Your home will last a lifetime.

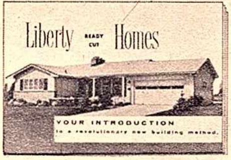
FREE CONSULTATION—The Liberty way is the foolproof way. However, if a problem of any kind arises during construction, Liberty's building consultants are ready to help you day or night without obligation.

78 DESIGNS—For 1960 Liberty offers the most beautifully designed homes in America today with unlimited floor plan variations to fit your specific needs.

LIKE TO VISIT A LIBERTY HOME?

Over 25,000 Liberty owners are thrilled with their homes—and there is one near you . . . just ask us for the address.

Priced from $3700 . . . Freight Prepaid



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Clip this coupon. Mail it with 25c for your BIG full-color catalog.

Mail to LIBERTY HOMES
6803 Lafayette Avenue, Bay City, Michigan

NAME______________________________

ADDRESS or RFD____________________________

CITY________________ZONE________STATE________

Our fights have turned to kisses!

IT'S hard to believe that my wife and I used to fight. She would start nagging at me the minute I got home from work and I would snap right back at her! We argued and bickered so often that we suddenly realized our marriage was breaking up! There wasn't any real reason for it except that both of us always felt so tired that we got on each other's nerves!

Our family doctor gave us some advice that probably saved our marriage. Otherwise normally healthy people, he told us, may become run-down and over-tired because of a vitamin-mineral deficiency. This could easily cause us to feel worn-out, tense and short tempered.

To correct this condition, each of us started taking Vitasafe High-Potency Capsules. Before long we had more pep, more energy — and our dispositions improved. Instead of fighting, we were back in each other's arms.

If you or your wife have lost the pep and energy you used to have . . . if over-tiredness makes you nervous and bad-tempered with the ones you love, you owe it to yourself to try proven Vitasafe High-Potency Capsules.

A dramatization posed by professional models.

FREE 30 day supply of HIGH-

LIPOTROPIC FACTORS, VITAMINS and MINERALS

Safe, Nutritional Formula Containing 27 Proven Ingredients: Glutamic Acid, Choline, Inositol, Methionine, Citrus Bioflavonoid, 11 Vitamins (Including Blood-Building B12 and Folic Acid) Plus 11 Minerals

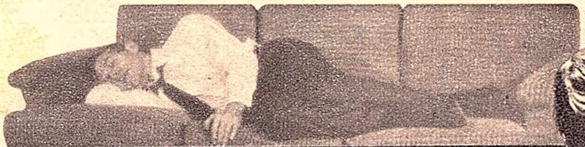
To prove to you the remarkable advantages of the Vitasafe Plan . . . we will send you a free 30-day supply of high-potency VITASAFE C.F. CAPSULES so you can discover for yourself how much stronger, happier and peppier you may feel after a few days' trial! Just one VITASAFE CAPSULE daily supplies your body with adequate amounts of *each and every vitamin* believed essential to human nutrition. Also included in this exclusive formula are Glutamic Acid — an important protein constituent derived from natural wheat gluten—and Citrus Bioflavonoid. This formula is so complete it is available nowhere else at this price!

HOW AMAZING PLAN SLASHES VITAMIN PRICES

With your free 30-day supply of Vitasafe High-Potency Capsules you will also receive complete details regarding the benefits of an amazing new Plan that provides you regularly with all the factory-fresh vitamins and minerals you will need. By participating in the Vitasafe Plan now you are never under any obligation! When you have received your first 30-day trial supply, simply take one VITASAFE Capsule every day to prove that this formula can help you as it is helping so many others. But you remain the sole judge. If you are not completely satisfied, and do not wish to receive

Mail Postcard To **VITASAFE CORPORATION, 23 West 61st Street, New York 23, N.Y.**
IN CANADA: 394 Symington Avenue, Toronto 9, Ontario

Why Does Daddy Sleep So Much?



SOMETIMES I couldn't blame my little boy for wondering. It seemed as though the only thing my husband enjoyed was SLEEP! He would come home from work completely worn-out, often he skipped supper and fell right into bed. What kind of companionship was this for his children, his friends, his wife?

My husband was such an energetic man. But for some reason he now seemed too tired to do anything. I wondered what I could do to help him.

Then one day I saw a Vitasafe ad in a magazine. It told how many otherwise normally healthy men and women could easily lose their pep and energy because of a prolonged deficiency of essential vitamins and minerals in their diets. The ad revealed that thousands of men and women had increased their pep and vitality through the famous Vitasafe Plan. Maybe this Plan could help my husband too.

I sent for the 30-day trial supply that was offered, and when they arrived, my husband started taking one a day. Before long my husband was like his old self again — peppy, energetic and wide awake!

If you want to help your husband as I did mine, mail the postcard for your 30-day trial supply without risking a penny.

A dramatization posed by professional models.

POTENCY CAPSULES

any additional vitamins, simply let us know by writing us before the next monthly shipment — or you can use the handy instruction card we will provide — and no future shipments will be sent. Yes, you are under no purchase obligation ever; you may cancel future shipments at any time!

But if you are delighted — as so many people already are — you don't do a thing and you will continue to receive fresh, additional shipments regularly every month — for just as long as you wish, automatically and on time — at the low Plan rate of only $2.78 plus a few cents shipping for each month supply. You take no risk whatsoever—you may drop out of this Plan any time you wish without spending an extra penny, by simply notifying us of your decision a few days before your next monthly shipment. Take advantage of our generous offer! Mail postcard NOW.

MEN RECEIVE IN EACH DAILY VITASAFE CAPSULE:

Choline Bitartrate	31.4 mg.	Niacin Amide	40 mg.
Inositol	15 mg.	Calcium Pantothenate	4 mg.
dl-Methionine	10 mg.	Vitamin E	2 I.U.
Glutamic Acid	50 mg.	Folic Acid	0.5 mg.
Lemon Bioflavonoid Complex	5 mg.	Calcium	75 mg.
Vitamin A	12,500 USP Units	Phosphorus	58 mg.
Vitamin D	1,000 USP Units	Iron	30 mg.
Vitamin C	75 mg.	Cobalt	0.04 mg.
Vitamin B_1	5 mg.	Copper	0.45 mg.
Vitamin B_2	2.5 mg.	Manganese	0.5 mg.
Vitamin B_6	0.5 mg.	Molybdenum	0.1 mg.
Vitamin B_{12}	2 mcg.	Iodine	0.075 mg.
		Potassium	2 mg.
		Zinc	0.5 mg.
		Magnesium	3 mg.

We invite you to compare the richness of this formula with any other vitamin and mineral preparation.

ALSO AVAILABLE, A VITASAFE PLAN WITH A SLIGHTLY DIFFERENT FORMULA FOR WOMEN. CHECK POSTCARD IF DESIRED.

VITASAFE
Distributed by:
THE VITASAFE PLAN
VITASAFE CORPORATION

YOURS
FREE
VALUABLE
FULL
MONTH'S
SUPPLY

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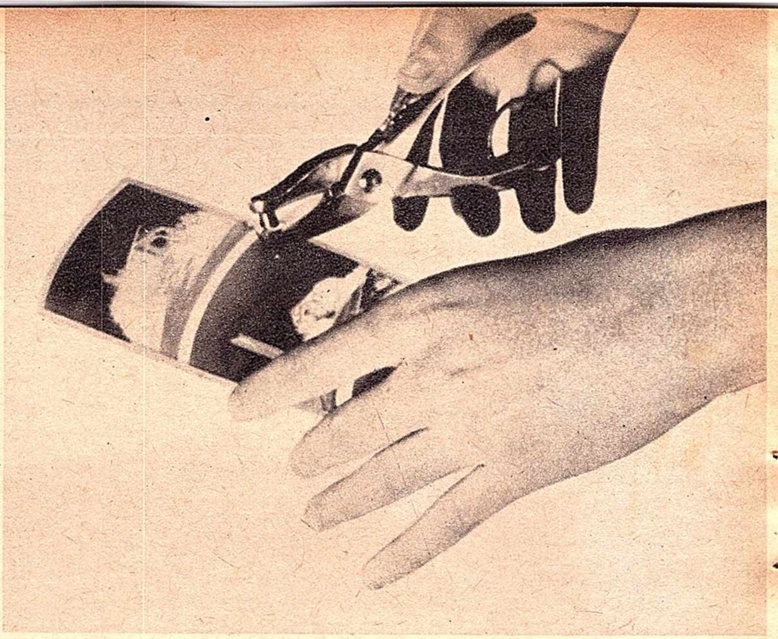
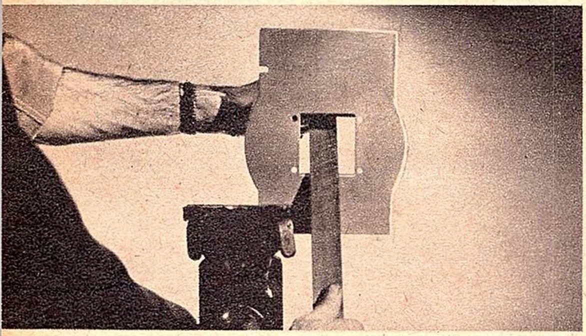
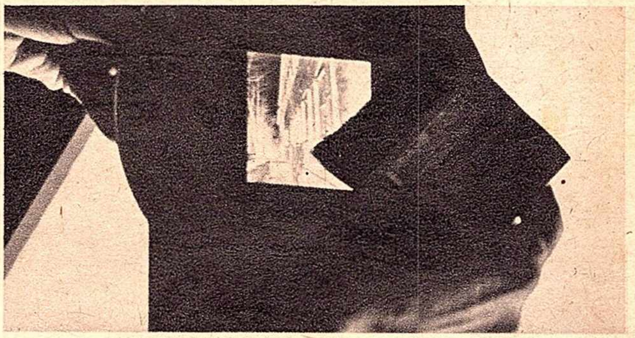
PHOTO SHORTS



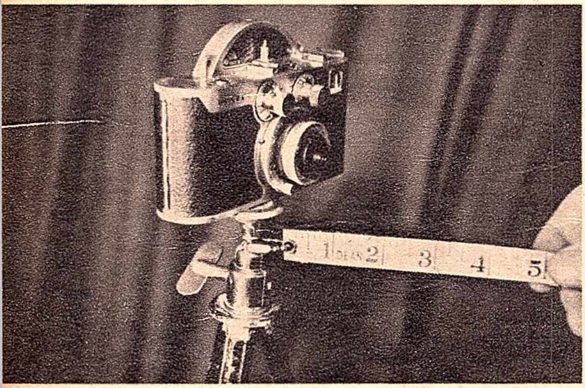
USE PAPER PUNCH to knick edges of negatives chosen for enlarging; then select them by feel in the darkroom.



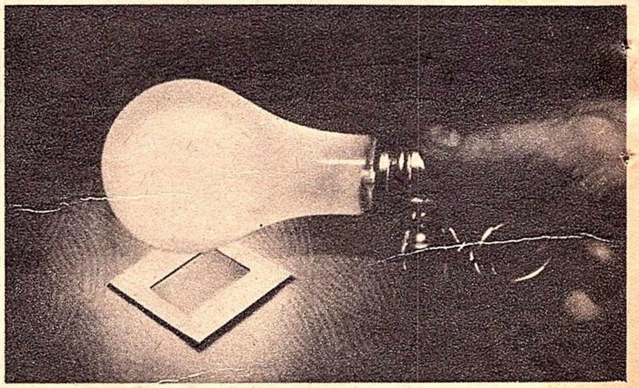
BEVEL the squared sides of the opening in a negative carrier and it's easy to . . .



. . . **BRUSH AWAY** the dust from any negative placed in the carrier for enlarging.



ATTACH tape to tripod to measure lens-to-subject distance for close-up photos.



HEAT from 100-watt bulb quickly seals a transparency in a thermal-seal mount.

REACH FOR THE
RED END
MADE ONLY BY
LUFKIN
X46®
LUFKIN
RED
END®
EXTENSION
LUFKIN
RED
END
QUALITY

Only the best wood rules merit this seal

If a carpenter catches you measuring something, he'll think you're a fellow professional (if you're using a Lufkin RED END rule).

This Lufkin X46, for example. It *looks* quality, with its natural finish and crisp, black graduations; or the 6″ brass extension that makes inside measuring so simple. It even *speaks* with authority . . . a decisive "snap" from gleaming joints and strike plates.

The X46 is only one of *four* Red Ends you'll find on the Lufkin Turnover Target—where you can select the exact rule that suits your needs. Reach for one at *your* hardware store.

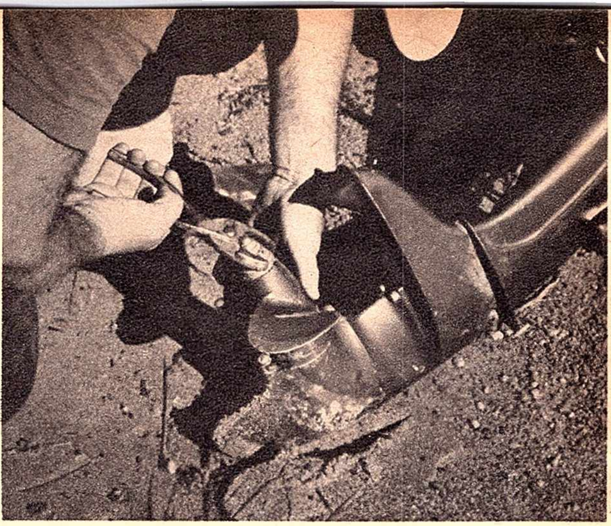
LUFKIN
BASIC MEASURING TOOLS

always look for the

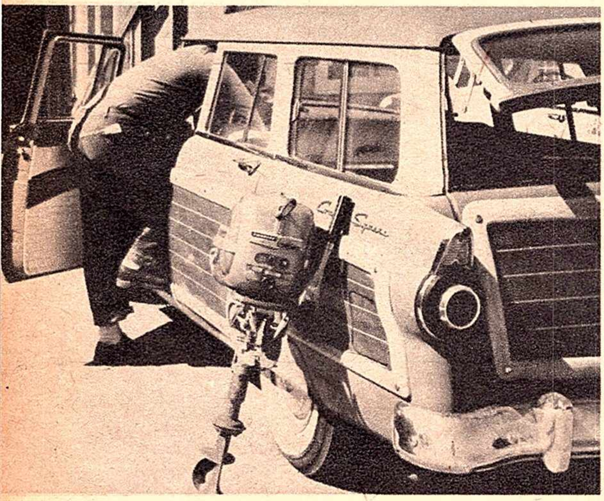
LUFKIN "TARGET"

where your hardware man displays his finest measuring tools.

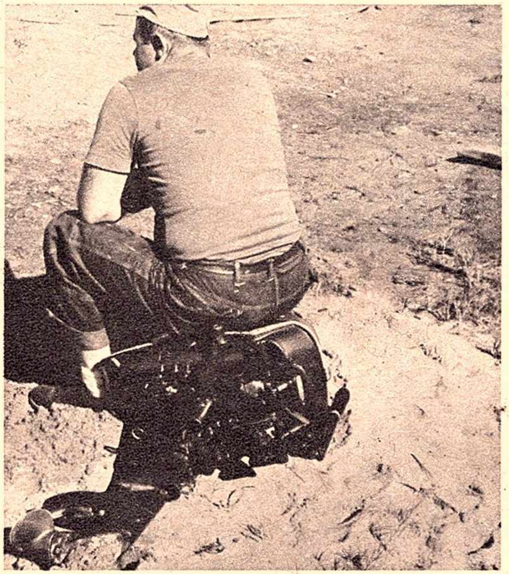
HOW TO RUIN YOUR *Outboard Motor*



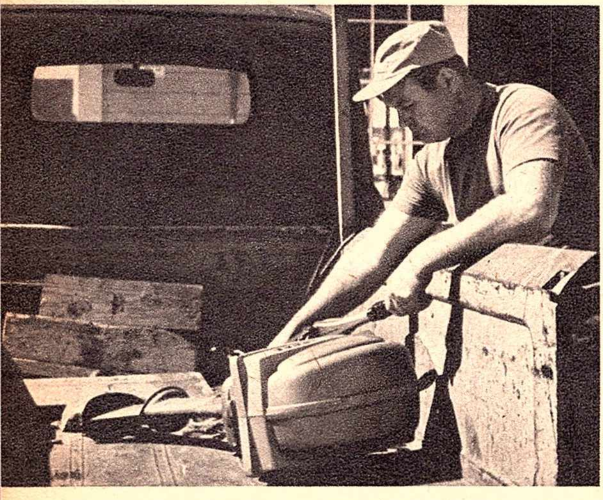
USE pliers instead of the proper wrench and you'll excell at rounding off a nut.

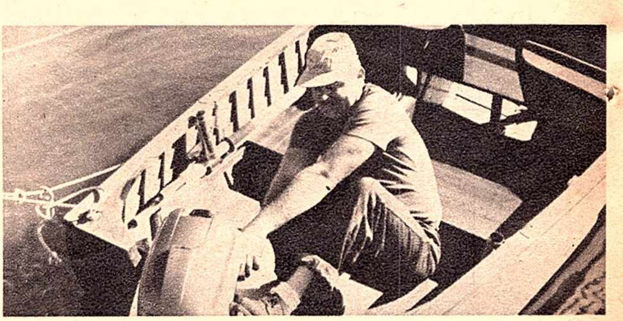


BALANCE a motor this way and then step into the car. Need we tell what happens?



SAND makes a good abrasive, also clogs parts—and to bend the shroud, sit on it.





TO DESTROY finish—and the magneto—a hard ride in a pickup is just the thing.

AVOID lubrication. Then force a frozen control instead of using penetrating oil.

THIS BABY'S GOT IT!
BLACK & DECKER
UTILITY JIG SAW

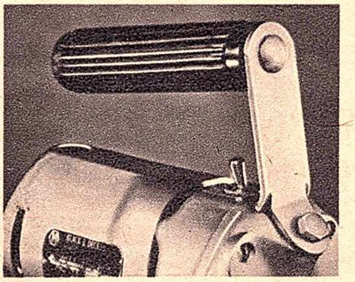
Improved B&D Jig Saw

25% faster cutting, better control

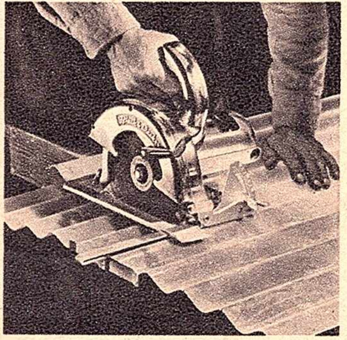
...greater value. Only $29.95.

Just out—and rarin' to go through practically any material with the greatest of ease: that's Black & Decker's improved Jig Saw! Does the work of a jig saw, sabre saw, keyhole saw and most band saw operations. Cuts straight, curved and intricate designs. Handles like a dream. Feels like a feather. Packs power to spare . . . up to 25% faster sawing. Maneuvers like a sports car.

What more do you want? A new low price? You've got that, too! This Black & Decker-engineered Jig Saw costs *only $29.95*. Jig Saw Attachment for B&D Drill, $14.95.



B&D'S NEW JIG SAW HANDLE is in a class by itself! Designed to "feel good," perfectly balanced for sure control, fast work. *Plus* three-wire cable. Two *extra* blades *free*.



HEAVY-DUTY SAWS. Famous B&D-built motors. Saws from $49.95. Saw Attachment for Drill, $14.95.

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Patents pending on revolutionary new engineering developments make this bargain possible. This is a power plane with all the features of machine tools costing 3 times OUR PRICE. It planes, rabbets, bevels, aids beveling and glueing joints; is so rugged and durable we *guarantee* it *unconditionally* for *ten years*

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SEND $19.95 CHECK OR M.O. SENT C.O.D. WITH $3.00 DEPOSIT

(If not completely satisfied after ten days return for full refund.) Shipped express collect.

AMERICAN MACHINE & TOOL CO., INC.
ROYERSFORD 31, PENNSYLVANIA

8" TILT ARBOR SAW

1959 MODEL BELOW COST

BLADE TILTS — TABLE STAYS LEVEL

Heavy duty all cast iron and steel construction. Precision ground cast iron table. Price includes massive cast iron mitre gauge and patented motor drive that fits any motor. Cross cuts, rips, bevels, mitres, dadoes, cuts compound angles — everything expected of saws costing four times as much. Depth of cut adjustable; 0" to 2¼" — table always level. Send check or M.O. $2.00 deposits on C.O.D.'s.

Shipped Complete as Shown

NOW $14.95 WITH BLADE

SPECIAL BARGAIN — This saw is our 1959 model. Each saw is brand new — sent to you in factory sealed cartons. Sold and guaranteed direct from the factory to you at a fantastic bargain.

FREE 10 DAY TRIAL — MONEY BACK GUARANTEE

Try this famous saw 10 days. If you are not satisfied that it does the work of any tilt arbor saw, regardless of price, return for immediate money back refund.

Sent Express Collect

We reserve right to refund money if stock is exhausted

AMERICAN MACHINE & TOOL CO.
ROYERSFORD 31, PA.

Rare Wood Wastebasket

[*Continued from page* 119]

BECAUSE of its beauty and dimensions, the wastebasket also makes fine magazine rack.

inch-deep plough cut in two adjacent sides along all but ¾ inches of their length. The bottoms of the feet are mitered 5°. Plough the bottom rails in the same manner as the legs, but along their *entire* length; the top rails are ploughed along their *bottom* sides only. Another jig utilizing wedges will be needed to glue the top and bottom rails to the panels.

In the final assembly the quarter-inch walnut bottom is fitted in place and the four legs glued to the panels. Hold the assembly together with large rubber bands until the glue sets.

Finish the basket with three coats of lacquer, rubbed down between coats, and followed by a buffing with paste wax.

With this step the project is complete and ready to reflect your craftsmanship in any office, den, or wherever you choose. •

LIST OF MATERIALS

One piece of ¼"x7½"x12" of each of the following woods:

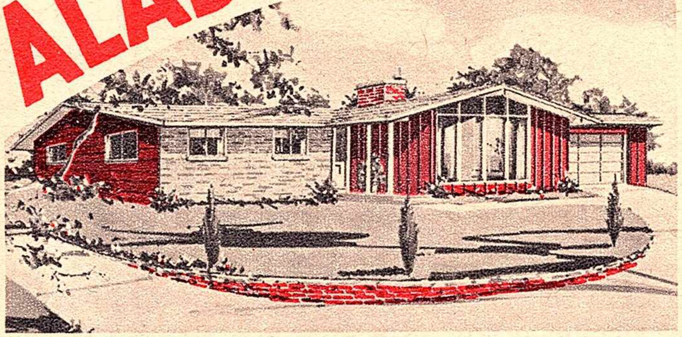
Cherry, Honduras mahogany, white maple, white oak, avodire, holly, limba, padouk, Brazilian rosewood, and teak.

One piece of ¾"x7½"x24" walnut

One piece of ¼"x7½"x24" walnut

Two running yards of ¾"x¾" walnut

ALADDIN READI-CUT HOMES



from
$3,000 to
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Choice of 115 designs

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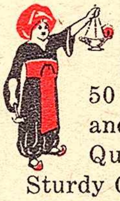
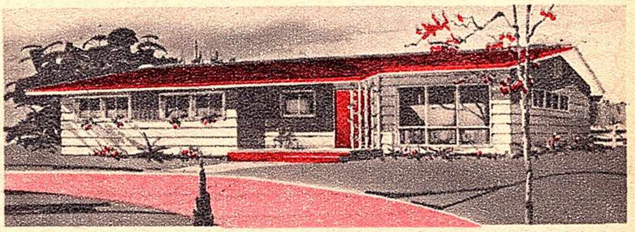
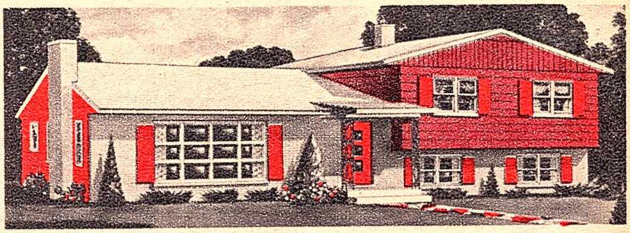
Read how you can save up to $5,000



Thousands of Aladdin Readi-Cut Homes, built 50 years ago, are sound and livable today. Finest Quality Materials *plus* Sturdy Construction have made Aladdin the World's Largest Readi-Cut manufacturer with homes in 49 states and 38 foreign countries. YOU SAVE 3 WAYS: 1. Through Aladdin's Tremendous Buying Power and Advanced Manufacturing Methods. 2. Waste is Eliminated — you don't pay for short ends and unusable materials. 3. You can Save 30% on Labor by doing all or part of the work yourself. (More than half our customers build their own Aladdin Homes!) All materials are precision cut at the mill — ready to use. Easy-to-read blueprints and special instruction book simplify every step. Latest 5 to 8 room designs — Ranch, Cape Cod, Split Level. Beautiful 1960 72-page "Book of Homes" in color tells how you can save. Send for it today.



Highest Quality — Best Construction



Mail to THE ALADDIN COMPANY, Bay City, Michigan 60-28

I enclose 25c for your 72-page
BOOK OF HOMES

NAME____________________

STREET____________________

CITY____________________

ZONE________STATE____________

PLEASE PRINT NAME AND ADDRESS

Your New Corvair

[*Continued from page* 125]

after. Be sure to clean out the shell before installing a new cartridge and remove the old seal from the filter, otherwise the new seal may block the filter's oil passage. It is also important to wipe off any spilled oil which might get on the engine's blower belt and cause slippage. *This blower is the heart of the Corvair air cooling system.*

Engine temperature is controlled by a hinged ring-type air valve at the blower intake. The valve can be adjusted by means of a swivel located on the thermostat valve. Should the thermostat fail, it will always open the valve fully so the engine will not overheat, but the engine will stall a lot if the valve is fully open and the temperature is low. The Corvair engine is enclosed by sheet metal shrouding which directs air over fins on the cylinder castings. Good news is the fact that the blower has a sealed and permanently lubricated ball bearing. But belt checking is part of the Saturday afternoon look-see.

In removing spark plugs, difficulty will be encountered with the center ones. There, it is necessary to disconnect or remove the throttle rods and use a universal drive on the spark plug socket. A $\frac{13}{16}$-inch spark plug socket is used for removal. Chevrolet says not to use any pipe compound on the threads when replacing the plugs since this will act as an insulator and change the plugs' heat characteristics. Set the gap at .035 inch, bending the outside electrode only. Torque to 20-25 foot pounds. Original equipment plugs are AC-44FF, 14 mm.

It's important to make sure the plug covers are tightly in place. If two are loose, all air pressure in the cooling system will be lost and the engine will run too hot. There may even be a mysterious whistling noise. And speaking of noises, keep in mind that the hydraulic valve lifters on the Corvair are designed to drain down after the engine stands idle. Don't be alarmed by the clatter on restarting; it's normal and won't last over 30 seconds.

An interesting feature of the automatic transmission is that it will automatically shift to D at 45 mph if the driver is accelerating that fast in L. Don't tow the car to start its engine. Push it. Start off in N with the ignition switched on and shift to L when the car reaches a speed of 25 mph. Contrary to the advice given by some of the other companies, Chevrolet doesn't recommend any periodic draining and refilling of the transmission oil, but they do stress the importance of not overfilling. The dry capacity of Powerglide, including the converter, is 12 pints. There's a difference of only one pint between Full and Add and there's a need for frequent checking, but don't add oil unless the level is near the Add mark on the dip stick when the engine is at normal operating temperature. You'll find the dip stick in the right front of the engine compartment. Check while the engine is being idled with the control lever in N.

An odd thing in the fuel system of the Corvair is the fact that the choke is located in the air horn assembly on top of the engine rather than at the carburetors which are separated from the engine manifold by an insulated block. A cross shaft, operated by the accelerator linkage, connects the throttle shaft levers of the two carburetors. Thus some of the adjustments that would normally be made at the carburetors are made at the air horn assembly which includes the automatic choke, choke modifier and the fast idle linkage.

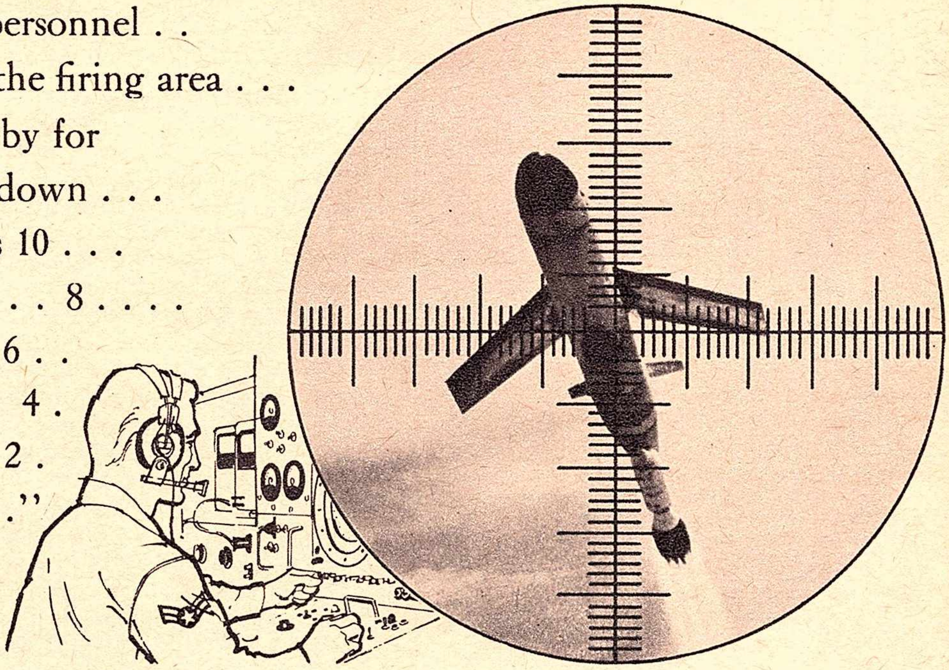
The air intake is through slots which are a feature of the car's rear deck. They must be kept open. That means cleaning snow away in winter before starting the engine. In the air cleaner, there is a special rubber-like element which should be removed and dunked in solvent every 5,000 miles. Squeeze out the solvent thoroughly and then dip the element in oil again, squeezing out the excess.

The oil cooler should be cleaned every 5,000 miles. After removal, the cooler is turned upside down to allow oil to drain out. The radiator fins should be cleaned with an air hose before as well as after cleaning them with solvent. New seals should be used on the oil cooler adapter. Always look carefully for oil leaks around the cooler after the cleaning job.

Corvair's gasoline heater includes a heat exchanger and burner assembly located on

[*Continued on page* 150]

"All personnel . .
clear the firing area . . .
stand by for
countdown . . .
minus 10 . . .
. . 9 . . . 8 . . . .
7 . . 6 . .
. 5 . . 4 .
3 . . . 2 .
. . 1 . ."



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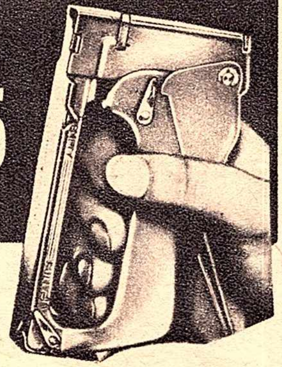

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Swingline® INC.

Dept. MI-3-0, Long Island City 1, New York

Your New Corvair

[*Continued from page* 148]

the right side of the dash panel in the luggage compartment. An overheat switch automatically shuts off fuel if the temperature rises too high, but resets itself when things cool off. For better rear-seat heating, operate the blower at high speed with the lever marked "fan" while regulating the degree of heat with the lever marked "heat." There's a third control for defrosting.

In an effort to provide highly efficient cooling it is perhaps natural that Corvair designers should invite carburetor icing by not allowing the mixture sufficient preheating. Carburetors are outside the blower system and do not have the advantages of a "stove" or "hot spot." In the temperature range of 30° to 45°F, and where there is considerable dampness, early production engines were inclined to stall because of ice forming across each carburetor's throat.

Chevrolet has corrected the problem with Corvair by the use of baffles to direct more warm air to the carburetors and changes in the acceleration pump.

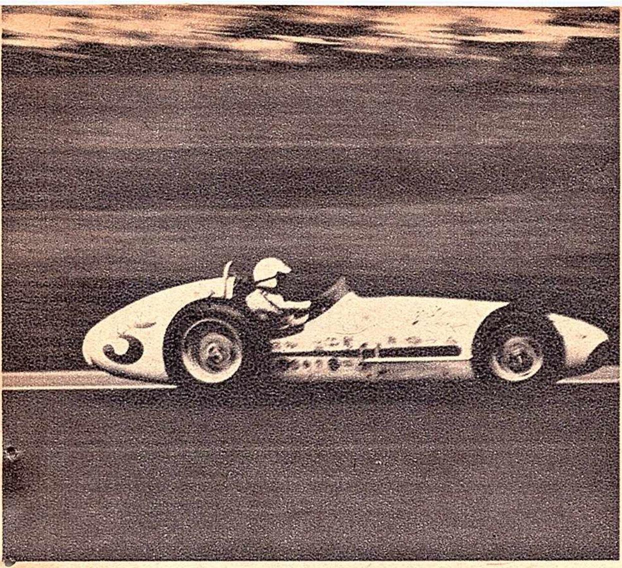
If you follow the rules, keeping your new Corvair in top form ought to be as much fun as driving it. •

Golden Hammer Awards

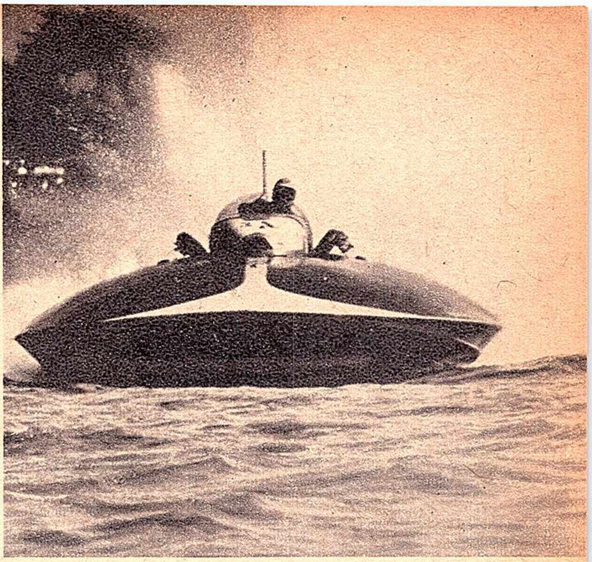
[*Continued from page* 110]

Gillett, Pa.; Mell Patter, Sarasota, Fla.; Dale E. Boss, Charlevoix, Mich.; George Lehman, Holgate, Ohio; Horace E. Savage, Bangor, Me.; Charles Brownell, Birmingham, Mich.; Frances N. Gagon, Lancaster, Calif.; C. La Mar Kemp, Dallas, Texas; W. H. Johnston, Rexdale, Ont., Can.; Fred G. Mott, Landover, Md.; Joseph Palermo, Westwood, N. J.; Charles M. Crawford, San Pedro, Calif.; David I. Cross, Omaha, Neb.; F. Boardman, New South Wales, Australia; Edna C. Ganow, Binghamton, N. Y.; Thomas E. Lewis, Scottsboro, Ark.; Ordean R. Claude, Ft. Madison, Iowa; Charles N. Bartholomew, Windber, Pa.; Frank Allsman, Upper Darby, Pa.; Lawrence W. Dahlman, Rosholt, S. D.; Richard Borchardt, Lexington, Ky.; Bob Kelly, Grand Rapids, Mich.; Paul L. Sobeski, Omaha, Neb.; William R. Silvertharnes, Hamburg, N. Y.; Roy E. Hedges, Imperial, Neb.; Le Roy M. Becker, Tracy, Calif.; Raymond W. Schmitz, Kirkwood, Mo.; Maxine Ramsay, Independence, Iowa; Walter W. Koveck, Warren, Mich.; N. R. Stanley, Wilmington, N. C.; John D. Warmack, Skokie, Ill.; Paul V. Buchancan, Murray, Ky.; Homer E. Lidster, Peoria, Ill.; William Yanky, Jackson Heights, N. Y.

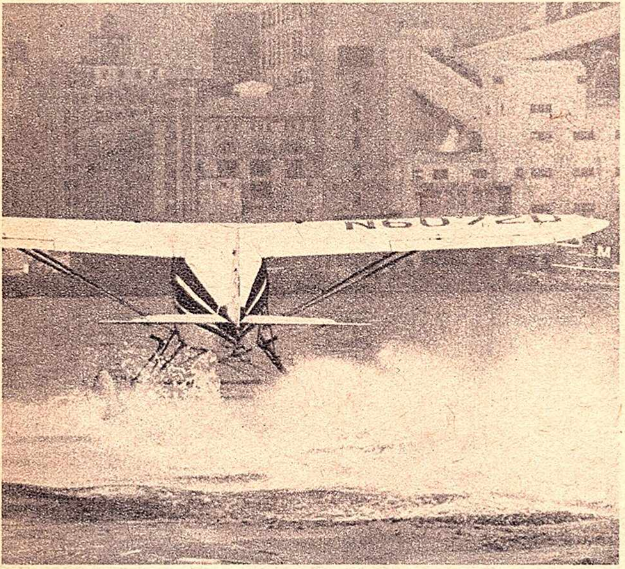
Watch for names of more winners next month.



9 out of 10 race car winners use Champion spark plugs . . .



9 out of 10 powerboat winners use Champions . . .



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so check your plugs every 5,000 miles!

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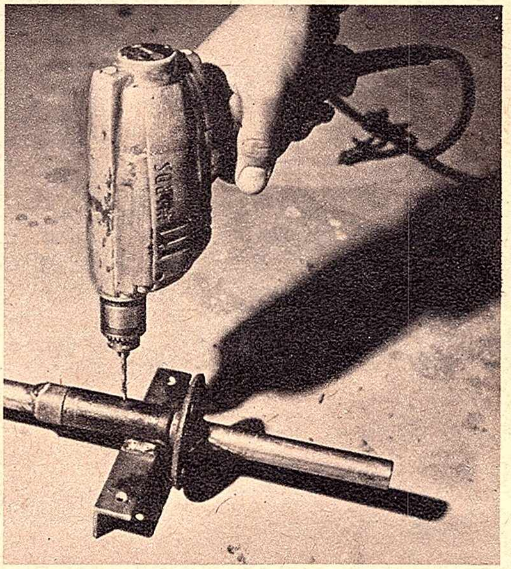
Paddle Wheel Boat

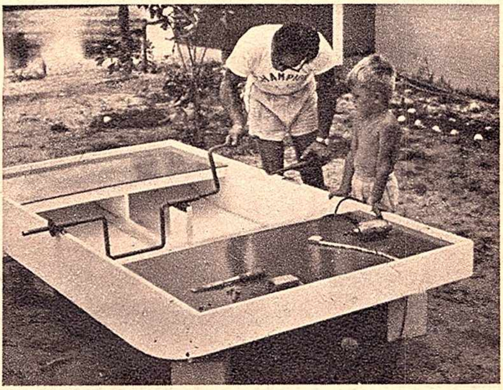
[Continued from page 115]



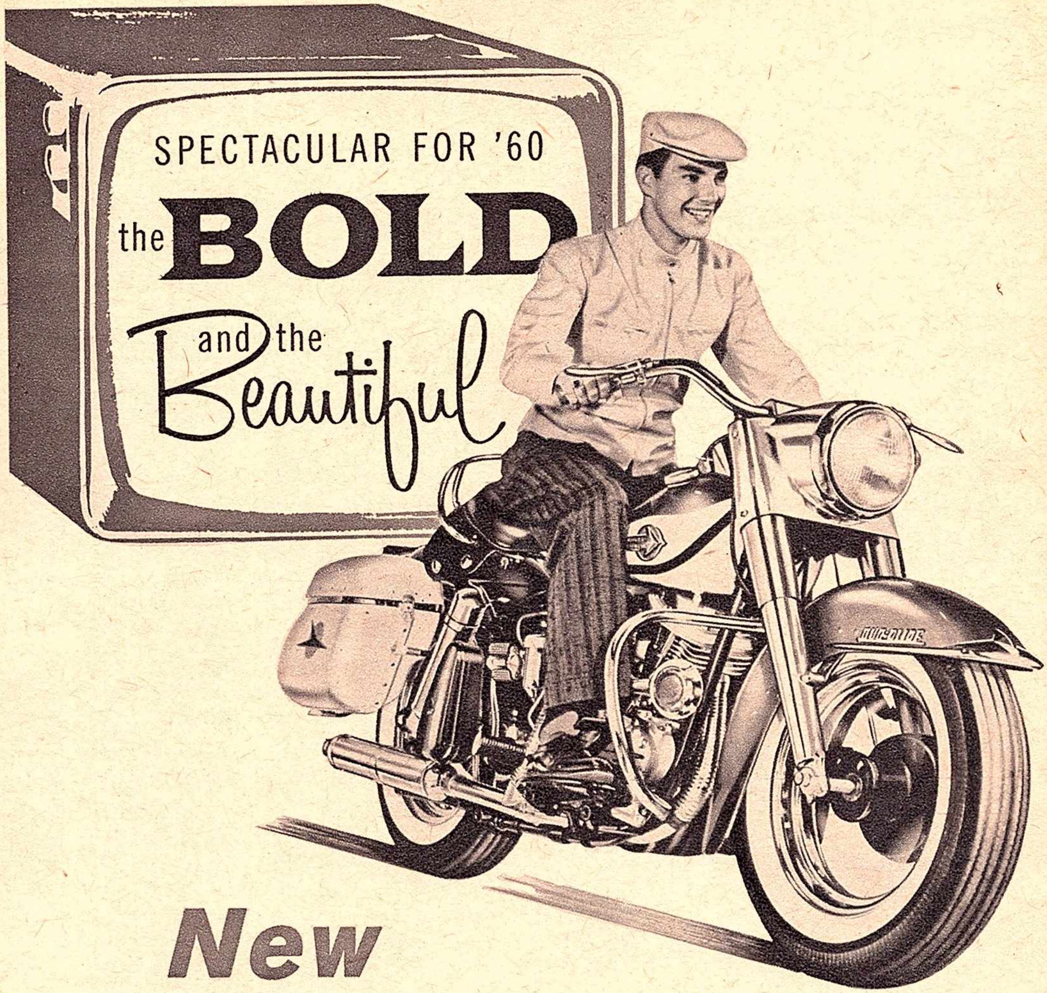
OIL HOLE is drilled in the center of each crank bearing. Note stop welded to the shaft.

flanges and the stops are welded to the rods, be sure that a 1/8-inch space is allowed between them and the pipe bearings. My total cost for the crank material and labor was under eight dollars.

Study the drawings and photographs and get to work. You'll look far and wide before you find another project which provides so much fun for kids at so little labor and cost. •



CRANKS are installed. Each is slipped into center bearing, then fastened to side plank.



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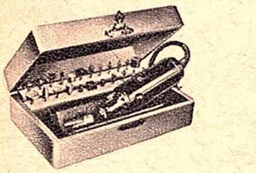

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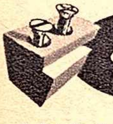

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Observing The Planets

[*Continued from page* 132]

be used either photographically or visually and the range can be extended beyond the colors visible to the eye, into the infrared and ultra-violet.

The photographic possibilities of color filters have been well known for some time. However, their systematic use in visual observation is comparatively recent. It is also within easy reach of the amateur astronomer. These filters need not be mounted in optical glass. A plain gelatine filter can be cut and inserted in the eyepiece or inside the tube (always out of focus).

Ordinary filters used in photography are not suitable for visual observation. There are two kinds of filters that can be used to advantage in visual work: the so-called tri-color sets, containing a red, a green and a blue filter, and the narrow-band monochromatic filters.

The object of the tri-color sets is to separate as nearly as possible the three fundamental color reactions of the human eye. The eye contains color-sensitive elements, called cones, of three kinds. One set has a maximum response to red, the other to green and the third to blue. The ranges of the three kinds of cone overlap. Thus, the red cones react to green and even blue light as well, though less strongly than to red, and it is the interaction of the responses of the red, green and blue cones that produces our different color sensations. For instance, the sensation of yellow is due to the combined action of the green and red cones, while a red response enters into the making of violet color.

Seen through a set of color filters, a color manifests itself as much by its presence as by its absence. Let us take, for instance, a visually gray object which yet has a little red in its make-up. When viewed through a red filter, it will appear relatively brighter than when a green filter is used. Snow has a green cast and so the polar caps of Mars and of Venus (the existence of the latter is not universally admitted but this writer has seen them so often and clearly that he has little doubt of their existence) stand out in sharp relief through a green filter.

[*Continued on page* 170]

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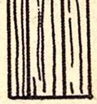

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Tom Tests The Valiant

[Continued from page 90]

and it shows what balance can do. I wasn't in on the design planning of this cookie but I suppose the engine was tilted to the right to compensate for the driver's weight on the left side of the car. Therefore, perhaps even before you read this, a heavier shock or maybe even a heavier torsion bar will be used on one side to even out this rather odd phenomenon.

One day at the Daytona Beach International Speedway, when the boys were waiting around to test some monster from Detroit in an endurance run, a handful of Falcons and Corvairs and one lone Valiant (my test car) were taken out on the sports car track and given a squeeze-out. Needless to say, there was very little contest. The Valiant whipped by its lower-caloried competitors like Halley's Comet might trickle by Piccard's balloon. This is a superior-performing automobile. Size-wise, when you're behind the wheel you feel as though you're tooling a 1950-53 car. This is a happy size to drive on the road and I wouldn't feel in the least abused if I had to drive a Valiant coast-to-coast and back.

This job will cruise across the prairies without any trouble at 80 mph-plus. The ride, though not sensational, is not tiring. Usually, when I start any new car test, after a few miles of driving I ask myself, "If I was a truss peddler and had to make runs from New York to Los Angeles by various routes, would I like to do it in this rig?"

In the old days, when these tests were young, I made as many as four to six coast-to-coast runs every year, under all conditions from sandstorms that lowered my compression as much as 30 to 40 pounds in all cylinders, to going across the Rockies in the teeth of a howling blizzard. I've crossed Nevada in temperatures of better than 120 degrees and I've seen it 40 below in Montana. When I visualize a car for this sort of work (and that's the only car I'd own—one that could go anywhere at anytime, providing there is road and some traction), the first requirement is always good suspension and handling. In this respect, the Valiant reminded me of a number of cars I've owned and driven through tough spots

[Continued on next page]

What the
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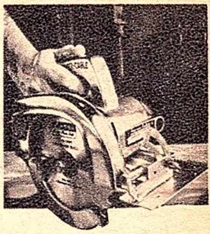
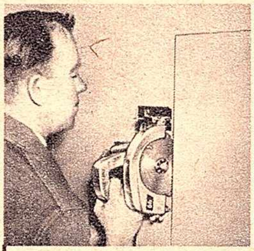
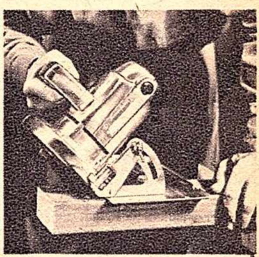
MODEL 66 SAW
can do...



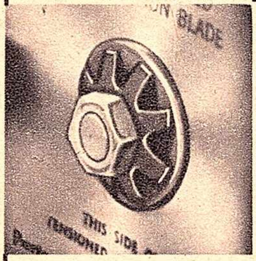
This portable power saw is the workhorse in any shop... built with professional features for top performance; converts to stationary saw with accessory saw table. Do a multitude of cutting tasks with wide variety of available blades.



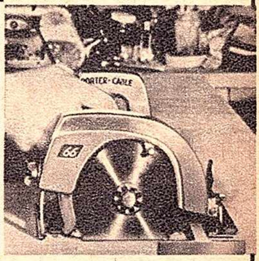
POCKET CUTS—Cuts openings quickly and easily in existing walls for windows, medicine cabinets, heat ducts, etc.



BEVEL CUTS — Model 66 bevel cuts any angle from 0° to 45° — in 2" dressed lumber. Calibrated quadrant for accurate angles.



KICKPROOF CLUTCH—Automatically puts saw into "neutral" if it jams or pinches in the cut. Prevents kickback for all around safety.



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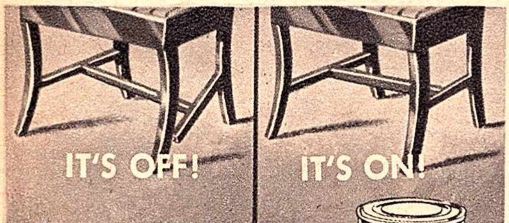

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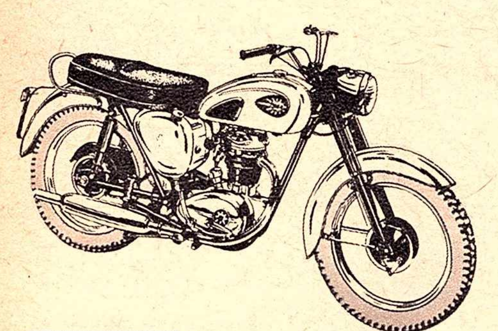

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Nutley, N. J.

and situations. This small (by today's standards) car will go a lot of places that the big balloons couldn't even attempt.

Since I've had the Valiant on test, there's been a scramble to see who gets it. Jim McMichael wants it for various trips he has to make. As this is being written, there's more than $30,000 worth of 1960 king-sized cars parked outside my house. Only one car is missing—the Valiant. My wife took it marketing because she thinks it's so much more fun to shift gears. (Our test car is a stick job, but automatic transmissions are available.) This test car is the Valiant 200—as stark as a fan dancer with one molted plume. It has few extras, not even a heater.

The gear lever of the stick shift is bent in an odd S to keep it out of the way of a third passenger in the front seat. For big guys like myself, I'd bend it a little more to the right in the interest of driver comfort. The box is crisp and as easy to run through as turning on a water faucet. The one thing that impressed me above all else about the Valiant (and this same feature impressed everyone else who drove it) was its extreme quietness. This little bucket has been beaten around for better than 1,000 miles, with less consideration shown to it than Uncle Sam gives a tardy taxpayer, and at this moment I can say with all sincerity that I've never driven in a Rolls-Royce that was any more silent. Engine noise is undetectable. Much of the quietness is undoubtedly due to Chrysler's new "Unibody" construction.

The legroom is far more than will be found in many larger cars; in fact, unless you're over six feet six you shouldn't find any problems in this department. The seat height allows enough headroom for a six-foot-sixer to wear a hat.

In summing up, this is the last of the Big Three compact cars to be tested on these pages. The Corvair, due to its many engineering firsts (for an American manufacturer) is more intriguing, in some ways, with its six-cylinder aluminum, air-cooled pancake rear engine. There are plenty of good things to say about Ford's Falcon. However, throwing all the good and bad points in a ballot box, including price tags, the Valiant gets my vote as the best buy of the three new compact cars and the one I'd most like to own. •

Cleaning & Cooking Fish

[*Continued from page* 72]

connoisseur.

To clean any fish (except catfish and eels) take a sharp knife and slit along the belly from the vent to the throat. Then scrape out the entrails and the gills. *Be sure to get out all the kidneys.* These are a dark strip clinging to the backbone like congealed blood. Soilage starts in the kidneys.

As soon as your fish is cleaned, wash it thoroughly inside and out. Then roll the fish in a strip of damp burlap and place in a wicker creel or basket. This permits ventilation and keeps the fish cool. Wash the burlap strip and creel or basket thoroughly with baking soda and water after each day's fishing.

How to bone small fish: Panfish are our most popular fish but generally small and bony. To get sweet, boneless flesh even from three—and four-inch sunnies, follow this little secret shown to me years ago by a farm cook. 1. Scale and clean thoroughly, leaving heads on. 2. Pour several inches of water in a large fry pan and bring to a boil. 3. Place fish in scalding water for one-half to one full minute according to size, then drain off water. 4. Take a dull knife and scrape meat from the bones (Figure A in our illustration). The flesh now peels readily and leaves all bones on the carcass. 5. Slice meat into thin sticks and roll in flour lightly. 6. Season with salt and pepper. 7. Fry in bacon fat and butter (not margarine) until golden brown. The resulting fish sticks taste like something out of this world. Ideal fish for this are yellow and white perch, sunnies, rock bass, crappies and all of the small saltwater fish caught around piers and breakwaters.

Boning large fish (except pickerel, pike and muskies) is best done by filleting. This eliminates all bones as well as the strong-tasting belly flesh so often left on fish. To fillet trout, salmon, crappies, perch, striped bass, porgies, sea bass, weakfish (spotted sea trout), bluefish, flounder and mackerel, you need not skin first. But all other

[*Continued on page* 161]

CASH FILING SAWS

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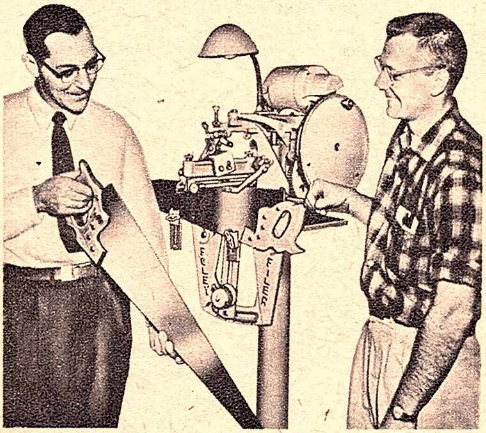

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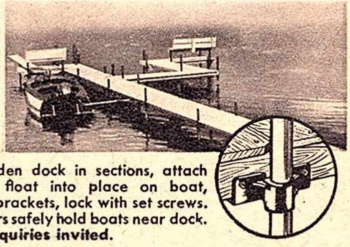

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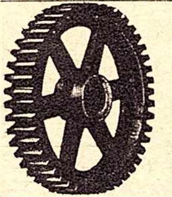

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fish should be skinned before filleting to rid them of a strong or muddy taste. You need not scale or clean a fish that is to be both skinned and filleted.

To skin a fish: 1. With a sharp knife cut skin completely around fish just below head and pectoral fins, leaving head on. Do not cut into flesh. 2. Cut the skin down along the back on each side of the dorsal fin, clear to the tail. 3. Cut the skin down the belly on each side of the belly fins to the tail. 4. Hold fish by head and grip a corner of the skin on back next to the head with a pair of pliers. 5. Peel skin off toward the tail (Figure B). Do this on both sides. Skin will peel more easily if you scald the fish first.

To fillet a fish: this can be done with the skin on or off. If you leave the skin on you must scale the fish before filleting. This is done best with a wet fish; use a dull knife, a ten-cent scaler or a spoon. After scaling proceed as follows: 1. Cut off head. 2. Grasp dorsal fin, cut fish lengthwise along one side of fin. Use a *sharp* knife. 3. Deepen this longitudinal cut until backbone is exposed. 5. Still grasping by dorsal fin, deepen cut forward, down toward belly, until you reach rib cage. Leave that strip of flesh on rib cage. 6. Reverse blade and slice down to the tail. 7. Cut off the fillet. This final cut is indicated by the lower broken line, Figure C. 8. Repeat filleting on the other side.

The most popular recipes for cooking fish are simplicity itself and preserve all the delicious natural flavors of the fish cooked.

Broiled trout: Wipe trout with damp sponge. Season inside and out with salt and pepper. Brush with melted butter and bacon fat. Broil under hot flame till a golden brown. Serve with a sauce made as follows: melt some butter, add salt and pepper, chopped parsley and lemon juice.

Fried trout: Fry three strips of bacon in large pan. Mix equal amount of butter with bacon fat. Place trout in sizzling fat and sprinkle with pepper. No salt is needed. Fry to golden brown.

Baked trout, salmon, bass, walleye or sea bass, striped bass, bluefish and other sea fish: Clean and dress whole fish. Do not split. Wash and wipe dry with damp sponge. Stuff with well-seasoned bread

[*Continued on next page*]

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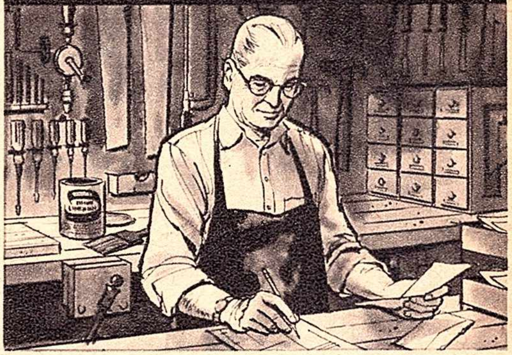

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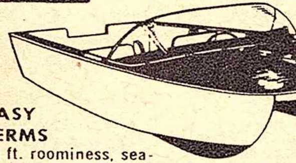

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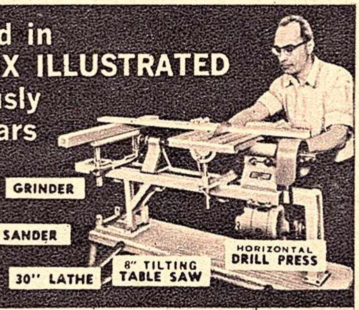

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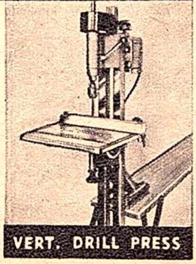

stuffing (you can buy this at supermarkets). Close opening with toothpicks or sew up with thread. Slit three or four gashes in skin but not flesh, in side of fish. Fill gashes with melted bacon fat. Place pinch of thyme or marjoram, one minced onion, three tablespoons of minced parsley and two tablespoons of salt pork fat in pan. Place fish on pan and bake at 350° F. Time: 15 minutes per pound or till fish flakes easily with fork.

Clean, bone and cook your fish according to these suggestions and you'll learn that the cooking and eating can be as much fun as the catching.

Good luck—and *bon appétit.* •

Batteries

[*Continued from page* 81]

here's a quick rundown on new battery-powered gadgets:

A weather gauge that gives wind speed and direction. Powered megaphone. Storm-warner that sounds an alarm at the approach of hurricane or wind storm. Floating flashlight. Powered Christmas tree. Battery-operated hand switch for opening garage doors.

A fire-maker for outdoor barbecues. Lighted bathroom scale. Flashlight-size vacuum cleaner. Hand-held electric fan. Battery-operated typewriter eraser. Manicure set. Battery-powered wristwatch and battery-*lighted* wristwatch. Lighted screwdriver. Movie camera and projector. Kitchen mixer. Map reader.

The list of battery-powered toys is as long as your arm (providing your sleeve-length isn't over 37"). The Toy Guidance Council recommends battery-powered electric trains, a machine shop and factory, sewing machine, toy vault, tanks, planes, cars, guns, missiles and more mechanical animals than you'd dream possible.

Latest product to hit the market are battery-powered model planes. The Japanese and Germans are first in this field with tiny motors working off two dry cells—the whole powerplant so light that it can be carried aloft by a flying model. (MI's Home-Shop-Crafts Section will soon publish a how-to-make project on one of these fascinating planes.)

All the items mentioned above are powered by the popular dry cell. There are, of course, many other kinds of batteries developed for specific jobs. There are nickel-cadmium (rechargeable) batteries, air cell batteries, mercury batteries, cathodic envelope batteries—and Allie Reynolds-Yogi Berra, one of the greatest batteries of all times.

In the last few years, because of the unique demands of missiles, rockets and space vehicles, battery research has taken some unusual directions. The big battery-makers, including Bright Star, Burgess, Eveready, Ray-O-Vac and others are all working on batteries for tomorrow, including. . .

Automobile power batteries: The return of the electric automobile (Oct. '59 MI) depends a great deal on developing a better battery of high power and long range. Two new types are currently being tested: the Yardney Electric Corp. silver-cadmium battery used to power a remodeled Dyna-Panhard (150 miles on one charge) and the tubular plate Exide Ironclad battery used to power electric delivery trucks in the Philadelphia area.

Fuel cells: Oxygen and nitrogen are fed into the cells from outside tanks. The gases react in an electrolyte generating a direct current which passes through a controller to a standard motor. Allis-Chalmers has demonstrated a fuel cell-powered tractor and sees a big future for the fuel cell as a power supply for cars, trucks and even space vehicles.

Solar cells: Silicon wafers convert light directly into electricity. They have been used to power radios, model cars and boats, telephone systems and electronic devices. Solar cells will have a wide application in space technology, particularly in transistorized radio and TV satellites.

Atomic batteries: Button-size atomic batteries using a radioactive isotope have been developed that produce low voltages over a long period. Other types of atomic power packages use the heat of a small atomic pile to spin a turbine which generates electricity.

These are just a few of the directions in which science is moving in its search for smaller, more powerful, more efficient electric power packages. With our space program as a spur, it seems likely that the next decade will see portable devices with a power output never dreamed possible. •

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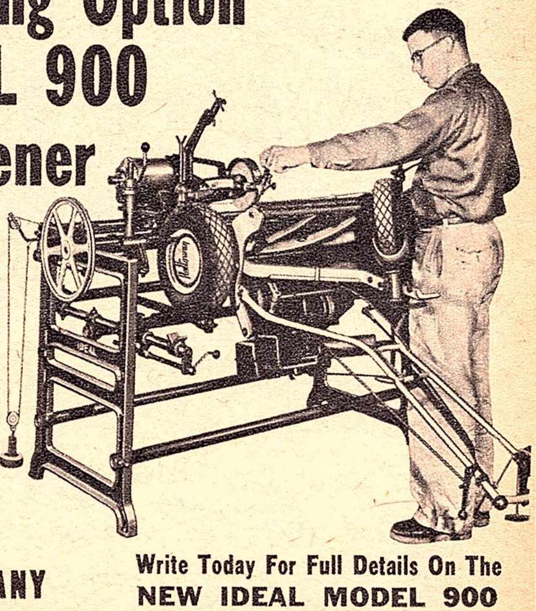

Improve Your Bowling

[Continued from page 71]

of the alley in line with the headpin. As you move into your delivery, you just naturally release the ball on the right side of the alley. If you're a lefty, line yourself up with your right foot in the center of the alley. Once you take your stance, always move straight ahead toward the foul line.

To help you develop a consistent stance, most of the newer alleys have a system of inlaid dots, called range-finders. The large center dot indicates the exact center of the alley. If it's an older house, without dots, do a little plank counting to find your spot.

I use a five-step delivery but I don't recommend it for everybody. A four-step is used by most bowlers. In this maneuver, the first step is with the right foot. The ball is pushed straight away from the body and allowed to start falling to the side. The first step should not be a long one. Its primary job is to get your body in motion toward the foul line. The second step with the left foot is slightly longer. The ball passes the knees and begins to swing to the rear.

The ball reaches the height of the backswing on the third step with the right foot. The left hand is extended forward for balance. On this backswing, be careful that the ball never rises above shoulder level.

The fourth step, on the left foot—the longest in the delivery—brings you up to the foul line in a graceful glide. As you slide to the foul line and release the ball, follow through with your arm.

This last step is the most important in the game. It's the explosion point. As you slide—and some slide a good distance, others hardly at all—bend the left knee, keeping your shoulders, parallel to the alley. As you do this extend the right foot to the rear, as you slide on the left. It balances the body and also acts as a brake for the slide.

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arm come forward and up to complete the pendulum. The hand should end up pointing at the pin at which you're aiming.

What do you look at when you deliver your ball—the pins or the alley? It's just a matter of deciding which one works best for you. Both spot and pin bowling are based on an imaginary line from the 1-3 pocket to the foul line—a line the ball should follow.

For pin bowling, glance at the pins to fix the line in your mind and, as you start your delivery, keep your eyes down the alley on the 1-3 pocket.

For spot bowling, glance at the pins when you take your stance. Fix in mind the spot where the imaginary line crosses the foul line. That's where to look all during your delivery—the spot on the alley just beyond the foul line where you want the ball to be put down. A true spot bowler never looks at the pins during his delivery.

Roll the ball—don't throw it. The ball should land not more than six to 18 inches beyond the foul line after it leaves your hand.

Don't worry too much about speed. A fast ball is difficult to roll accurately and even if you hit the pocket consistently, a ball that is too fast usually chops right through, leaving you those score-killing splits—pins on the opposite sides of the alley—to shoot at.

The three types of desired rolls are the straight, hook and curve. I suggest you begin with a straight ball, which is delivered with the thumb on top and the fingers underneath the ball. You roll it off your palm. For a straight-ball grip think in terms of a clock, with your thumb at about 12 o'clock.

Whatever you roll, don't get strike-happy. (A strike is when you knock down all the pins with your first roll in each frame. There are ten frames in a bowling game just as there are nine innings in a baseball game.) Many bowlers, if they don't get a strike, tend to relax and not concentrate on the spares. That's wrong. A spare gives you ten pins, plus whatever you knock down with the next ball. The easiest way to build your average is to develop accuracy on spares.

Now it's up to you. Good luck! •

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Escape Pods

[*Continued from page* 61]

aircraft this problem of escape in the air is still as far from solution as the day the first passenger airliner took off.

From time to time individual parachutes have been considered for airliners, but always rejected.

The objections are sensible up to a point but show a limited outlook. Getting 100 or more passengers into parachute harness in a few seconds is extremely difficult. Some passengers would probably balk at jumping. Lastly, the parachute itself can be dangerous for an untrained user.

In our opinion there *is* a way out of this dilemma. MI proposes large, twin parachute pods, each capable of carrying half a plane's passenger complement, as an aerial lifesaver concept to be pondered by both airlines and plane manufacturers.

From the outside our "safety plane" looks much like other airliners. Inside one can see where the cabin is divided into detachable compartments. There is a bulkhead with an airtight hatch at the trailing edge of the wings, to seal off the after pod in an accident. The forward pod has two bulkheads, one at each end. The aft bulkhead is at the leading edge of the wings and the forward one is just aft the cockpit. The fixed section amidships holds the galley, carry-on luggage rack and washroom.

The overhead of each pod, packed with five huge cargo parachutes, fits into the fuselage. The space between the pod's deck and belly contains barrel-size rubber bags which are attached to the pod. When inflated with CO_2 cartridges, these absorb two-thirds of the landing shock. In water landings the bags turn the pod into an unsinkable boat. Two heavy ballast weights attached by cables to the underside of the deck can be dropped through the skin to dangle several feet deep and improve stability.

After ejection, a pod can maintain pressurization, supply oxygen and protect its occupants from cold. An automatic transmitter sends out distress calls. If separation is at high speed and altitude the pod is allowed to fall free until it drops to a speed (175 mph) and altitude (about 10,000 ft.) where the main parachutes can be opened and the air is thick enough to maintain life. The blunt nose, besides creating drag to cut speed, actually helps stabilize the capsule and make it fall straight and true. A small drag chute trailing out behind also acts as a brake and keeps the nose pointed into the wind.

Let's see how our parachute pod works:

Before take-off, passengers are given instructions in what to do in case of an emergency in flight and familiarized with the necessary bell and buzzer signals. It is a drill not unlike those aboard ocean liners. In case of ejection, standard procedure calls for the co-pilot to bail out with one capsule, the flight engineer with the other. If they are incapacitated, the hostesses take over.

After a mid-air mishap the plane captain is faced with two emergency steps. 1) He presses a buzzer to alert passengers, who quickly fasten seat belts, buckle on shoulder straps and press their foreheads against shock absorbers that prevent the head from snapping forward. 2) The captain decides whether a safe landing is possible. If not, the crewmen close the bulkhead doors and take their positions in the pods. When they are ready the pilot maneuvers into the best possible position and rings a bell signal. The co-pilot, in the forward pod, presses a button and the capsule is blown clear by eject cartridges. The after pod follows a moment later. With both pods away, the pilot escapes in an individual parachute.

Inside the capsule, gauges tell the co-pilot his altitude and speed. If ejection was at 20,000 feet, he probably will be able to open the main chutes at 10,000 feet. Passengers are thrown violently against their harnesses by the opening shock but the danger of injury is not high. The co-pilot begins a count-down to estimated landing time, the shock-absorbers are inflated and the pod pancakes into the ground (or water).

Parachute pods couldn't save all the people involved in mid-air accidents. If damaged itself, the pod might not function. Its usefulness at low altitudes would be doubtful. But pods would cut down the number of air fatalities and they might save your life or mine, or that of some member of your family or mine.

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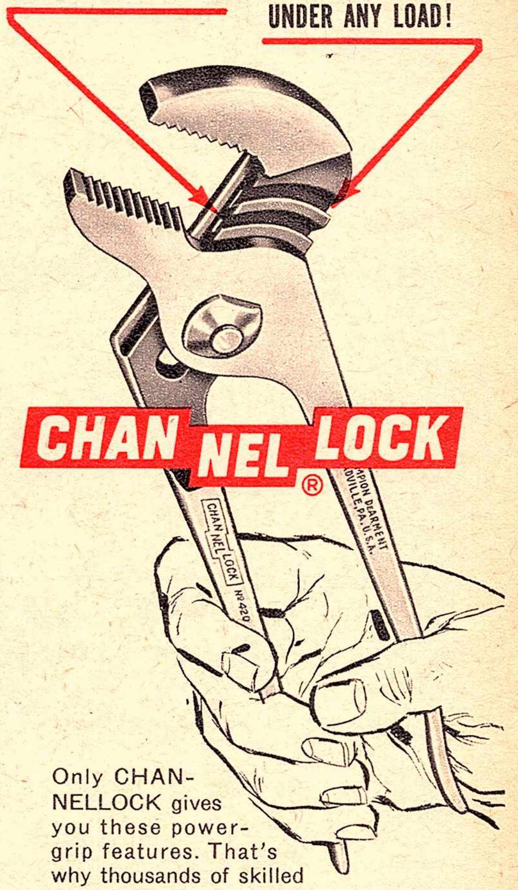
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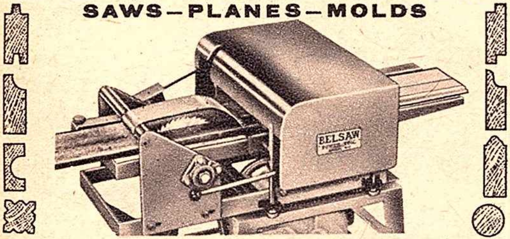

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The Oldsmobile

[*Continued from page* 94]

gunwales with heavy luggage, two dogs and my wife. By making his left turn, the other car had completely blocked the two lanes of highway. He was traveling at less than 15 miles an hour, not more than 50 feet in front of me. Instantly I glanced to the left and saw a four-foot drainage ditch which would have ripped my car apart. If I plowed straight ahead into this jerk, I undoubtedly would kill him and his passenger.

I had no choice. I whipped the wheel hard to the right, which threw me into a left broadside. If I had let it stay in this slide more than a fraction of a second, it would have rolled me over. The moment I felt the right wheels lifting, I cut hard left, which momentarily straightened me. Then I cut to the right again and just eased by the tail of the other car with what couldn't have been more than a thousandth of an inch to spare.

Jim McMichael, who was right behind me in another car, witnessed the whole thing and felt sure the big car I was driving was going to roll. It didn't. However, if my suspension hadn't been the best made in America, you wouldn't be reading this piece. Any sloppiness of suspension in a situation like this and the guy in the other car would have been deader than last week's smelt. I doubt if my wife and I would have been in too good shape, either. We and that stupid little man in North Carolina are alive today thanks to real top-flight suspension on my car, and nothing else. I own three other cars besides the one I was driving and I know I wouldn't have had a prayer in any of the other three.

So much for suspension which the Olds, in my opinion, sadly lacks. The rest of the car is pretty plush, from its nice sponge-rubber headlining to its really comfortable seats. Incidentally, due to David McDonald and his steel-working pixies, I got our test car in a rather unorthodox way. Quite often when we need cars for testing we borrow them from a zone sales office or factory. However, with the steel boys bickering, there were no Oldsmobiles available so I *rented* this hack! Which means it was as strictly stock as feathers on an ostrich's butt. I'm sure the people who rented me the car were unaware of my purpose or they might possibly have had reservations, as car-testing is not one of the things their clients usually go in for.

The Olds dashboard sports an amazing array of idiot lights instead of instruments. They read GEN—OIL—HOT—COLD, which is like getting a weather report which merely states "We will have some." The speedometer is a twisting worm that goes from left to right and changes color from green to yellow to red. The headroom is far from exceptional.

The power plant in the Super 88 is a big 394-cubic-inch mill which (they claim) develops 315 horsepower. The smaller Dynamic 88, which we didn't test, has a V8 that develops 240 horsepower. This kite is built on a 123-inch wheelbase with an overall length of 217.6 inches and a width of 80.6. This is a big car, selling right in the middle of the medium-price field where competition is hotter than a tabasco taster's kiss. On the Super 88 we tested, a good old manual transmission is standard equipment but our job, being a deluxe puff, was equipped with Hydramatic.

The air conditioning was pretty fair and seemed to do a good job in the front seat. You may recall we tested the 1959 Olds 98 over hundreds of miles of snow and ice and found the traction excellent. We also complained about the chrome strip along the top of the door that scooped water into your lap when it rained and cut into your arm when you indulged in a bit of outside arm driving. This strip has happily been eliminated for 1960 and the car still has top traction.

In summing up, six or seven years ago the Olds 88 was the hottest car, performance-wise, in the country. It won more stock car races than any other make in those days. However, Olds leadership in this department went over the fence with the introduction of a number of hotter cars such as the Pontiac, the first V8 Chevy and some Ford products. Despite this, Olds still scores on the tracks occasionally when in the capable hands of such men as Lee Petty. Oldsmobiles are racing rarities these days, whereas six years ago they constituted more than half the field in most events. These cars are comfortable, fairly well-appointed and excellent from the point of endurance and reliability. •

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Observing The Planets

[*Continued from page* 154]

Thus, by comparing the relative brightness of various features through the filters of a tri-color set, their true coloring can be ascertained by a process of elimination. This experiment will reveal delicate hues in the seeming colorless moon. It will be noticed that some of the clear dark areas in the "seas" appear only through a filter set.

A diamond-shaped region below the bright crater Aristarchus is much sharper and darker in the ultra-violet than in the infrared. This is one of the most conspicuously colored lunar features. When the moon is clear and high, the mustard-yellow hue of the "diamond" is clearly visible with the eye unaided by filters—and yet it sometimes looks pale through the blue and violet filters as well. This would be quite impossible without the intervention of some sort of atmosphere.

Apart from allowing us to get at the real colorings of planetary features, a red filter is useful for its haze-penetrating power. In poor seeing the clearness and steadiness of the image can be improved by a red filter. Moreover, no lens, however perfect, can focus the light of several colors at one point. So, a monochromatic filter, and to some extent a tri-color filter, may improve optical definition.

The true separation of different colors requires monochromatic filters, which allow the light to pass only a "simple" pure color. Monochromatic filters can be very useful both for color study and for improving optical definition. By the same token they severely cut down the amount of light reaching the eye and cannot be successfully employed for faint objects, or with high powers and small apertures.

Filters can disclose in a planetary disk much of interest that can be neither seen nor suspected without them. Since the visual use of filters has not properly come into its own there is still a good deal that can be discovered or confined in this field with quite modest means. Look at the belts of Jupiter and Saturn; see how they are emphasized by a green filter. •

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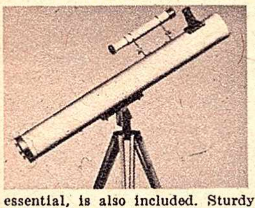

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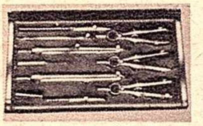

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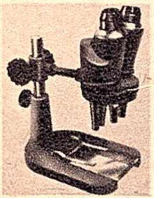

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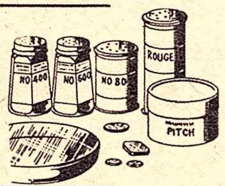

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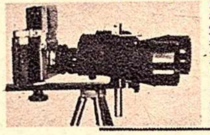

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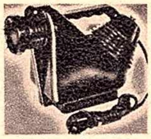

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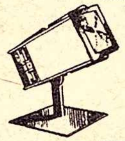

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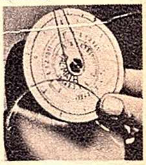

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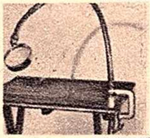

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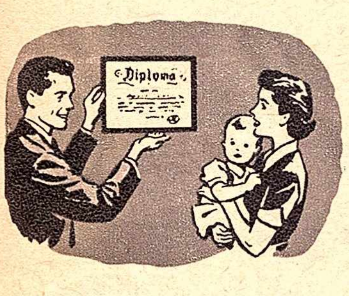

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